

117TH CONGRESS  
1ST SESSION

# H. R. 4153

To advance clean power technology development and use through innovation and clean energy standards, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

JUNE 24, 2021

Mr. MCKINLEY (for himself, Mr. SCHRADER, Ms. TENNEY, and Mr. COSTA) introduced the following bill; which was referred to the Committee on Energy and Commerce, and in addition to the Committees on Ways and Means, Science, Space, and Technology, Transportation and Infrastructure, Oversight and Reform, and Financial Services, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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## A BILL

To advance clean power technology development and use through innovation and clean energy standards, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Clean Energy Future  
5 Through Innovation Act of 2021”.

6 **SEC. 2. DEFINITIONS; TABLE OF CONTENTS.**

7 (a) DEFINITIONS.—In this Act:

1           (1) COMMISSION.—The term “Commission”  
2           means the Federal Energy Regulatory Commission.

3           (2) SECRETARY.—The term “Secretary” means  
4           the Secretary of Energy.

5           (b) TABLE OF CONTENTS.—The table of contents for  
6 this Act is as follows:

Sec. 1. Short title.

Sec. 2. Definitions; table of contents.

#### TITLE I—CARBON CAPTURE, UTILIZATION, AND STORAGE

##### Subtitle A—Research, Development, and Demonstration for Carbon Capture, Utilization, and Storage Technologies

Sec. 101. Fossil energy objectives.

Sec. 102. Carbon capture technologies.

Sec. 103. Carbon storage validation and testing.

Sec. 104. Carbon utilization.

Sec. 105. Advanced energy systems.

##### Subtitle B—Deployment of Carbon Capture, Utilization, and Storage With Commercial-Scale Electricity Generation Facilities

Sec. 111. Deployment of carbon capture, utilization, and storage technology  
with commercial-scale electricity generation facilities.

##### Subtitle C—Federal Support for Commercial Deployment of Carbon Capture, Utilization, and Storage

Sec. 121. Enhancement of carbon dioxide sequestration credit.

Sec. 122. Reform of loan guarantee program.

Sec. 123. Private activity bonds for carbon dioxide capture facilities.

Sec. 124. Extension of publicly traded partnership ownership structure.

Sec. 125. Production tax credit for certain electricity generation using carbon  
capture utilization and storage.

Sec. 126. Elective payment of credit.

Sec. 127. Allowance of the carbon oxide sequestration credit against the base  
erosion minimum tax.

Sec. 128. Modification of merchant banking investment regulation.

##### Subtitle D—Support for Carbon Dioxide Transportation and Sequestration Infrastructure

Sec. 131. Facilities for carbon dioxide transportation and sequestration.

Sec. 132. Carbon dioxide sequestration utilities.

#### TITLE II—INNOVATION IN RENEWABLE ENERGY, ENERGY EFFICIENCY, AND STORAGE

Sec. 201. Establishment of technology performance and cost targets.

Sec. 202. Advanced innovation and commercialization program.

- Sec. 203. Updating manufactured homes.
- Sec. 204. Investment tax credits for energy battery storage, offshore wind, and certain hydropower technologies.
- Sec. 205. Extension of production tax credit for solar and on-shore wind.
- Sec. 206. Renewal of qualifying advanced energy project credit.
- Sec. 207. Performance-based tax credits for commercial and residential buildings.
- Sec. 208. Extension of publicly traded partnership ownership structure to renewable energy projects.
- Sec. 209. Manufacturer credit for high-efficiency heat pumps and heat pump water heaters.
- Sec. 210. Other authorizations of appropriations.

#### TITLE III—EXISTING AND ADVANCED NUCLEAR POWER PLANTS

- Sec. 301. Zero-emissions credit program.
- Sec. 302. Investment tax credit for nuclear energy property.
- Sec. 303. Expanding Federal clean electricity purchasing requirements.
- Sec. 304. Modernizing the Nuclear Regulatory Commission.
- Sec. 305. Demonstration and early deployment of advanced nuclear reactors.
- Sec. 306. Authorization of appropriations for loan guarantees for advanced nuclear facilities.
- Sec. 307. Expanding the production tax credit for nuclear power.

#### TITLE IV—CLEAN ELECTRICITY STANDARD

- Sec. 401. Certification of cost-effective market penetration of clean electricity technologies.
- Sec. 402. Federal clean electricity standard.
- Sec. 403. Regional clean electricity planning models.
- Sec. 404. Stand-by emission performance standards.

#### TITLE V—MISCELLANEOUS

- Sec. 501. Additional requirements.
- Sec. 502. Utilization of qualified apprentices by construction contractors.
- Sec. 503. Requirements applicable to tax incentive programs.

1       **TITLE I—CARBON CAPTURE,**  
 2       **UTILIZATION, AND STORAGE**  
 3       **Subtitle A—Research, Develop-**  
 4       **ment, and Demonstration for**  
 5       **Carbon Capture, Utilization,**  
 6       **and Storage Technologies**

7       **SEC. 101. FOSSIL ENERGY OBJECTIVES.**

8       Section 961 of the Energy Policy Act of 2005 (42  
 9       U.S.C. 16291) is amended—

1           (1) in subsection (a)(2), by adding at the end  
2           the following subparagraph:

3                   “(M) Preventing, predicting, monitoring,  
4                   and mitigating the unintended leaking of car-  
5                   bon dioxide or other fossil fuel-related emissions  
6                   into the atmosphere.”; and

7           (2) by amending subsection (b) to read as fol-  
8           lows:

9           “(b) AUTHORIZATION OF APPROPRIATIONS.—There  
10          are authorized to be appropriated to the Secretary to carry  
11          out fossil energy research, development, demonstration,  
12          and commercial application activities, including activities  
13          authorized under this subtitle, \$2,200,000,000 for each of  
14          fiscal years 2022 through 2031.”.

15       **SEC. 102. CARBON CAPTURE TECHNOLOGIES.**

16          Section 962 of the Energy Policy Act of 2005 (42  
17          U.S.C. 16292) is amended—

18               (1) in subsection (e)—

19                   (A) in paragraph (2)—

20                           (i) by striking “and” at the end of  
21                           subparagraph (B);

22                           (ii) by striking the period at the end  
23                           of subparagraph (C) and inserting “; and”;

24                   and

1 (iii) by adding at the end the fol-  
2 lowing:

3 “(D) test technologies that represent the  
4 scale of technology development beyond labora-  
5 tory testing, but not yet advanced to testing  
6 under operational conditions at commercial  
7 scale.”;

8 (B) in paragraph (3)(C)—

9 (i) in clause (i), by inserting  
10 “precombustion, postcombustion, or oxy-  
11 combustion” after “facilities for”;

12 (ii) in clause (ii), by striking “; or”  
13 and inserting a semicolon;

14 (iii) in clause (iii), by striking the pe-  
15 riod at the end and inserting a semicolon;  
16 and

17 (iv) by adding at the end the fol-  
18 lowing:

19 “(iv) have capability to test integra-  
20 tion of carbon capture technologies with  
21 utility-scale power plants; or

22 “(v) have commercial market partici-  
23 pants, including equipment and technology  
24 suppliers and power generators, involved in  
25 the proposed Center.”; and

1 (C) by redesignating paragraph (7) as  
2 paragraph (8), and inserting after paragraph  
3 (6) the following:

4 “(7) COST SHARING.—The Secretary shall re-  
5 quire cost sharing under this subsection in accord-  
6 ance with section 988(b).”; and

7 (2) by adding at the end the following:

8 “(f) AUTHORIZATION OF APPROPRIATIONS.—There  
9 are authorized to be appropriated to the Secretary to carry  
10 out this section \$600,000,000 for each of fiscal years 2022  
11 through 2031.”.

12 **SEC. 103. CARBON STORAGE VALIDATION AND TESTING.**

13 Section 963 of the Energy Policy Act of 2005 (42  
14 U.S.C. 16293) is amended—

15 (1) in subsection (b), by adding at the end the  
16 following:

17 “(4) FEDERAL DATA COLLECTION.—The Sec-  
18 retary, in coordination with other Federal agencies  
19 including the United States Geological Survey, shall  
20 continue and expand ongoing Federal data collection  
21 and analysis activities related to carbon dioxide stor-  
22 age, economics, and spatial relationships on a local  
23 and regional scale, in coordination with State and  
24 regional entities.”; and

1           (2) by amending subsection (g) to read as fol-  
2       lows:

3       “(g) AUTHORIZATION OF APPROPRIATIONS.—There  
4       are authorized to be appropriated to the Secretary to carry  
5       out this section—

6           “(1) \$200,000,000 for fiscal year 2021; and

7           “(2) \$250,000,000 for each of fiscal years 2022  
8       through 2031.”.

9       **SEC. 104. CARBON UTILIZATION.**

10       Section 969A(d) of the Energy Policy Act of 2005  
11       (42 U.S.C. 16298a(d)) is amended to read as follows:

12       “(d) AUTHORIZATION OF APPROPRIATIONS.—There  
13       are authorized to be appropriated to the Secretary to carry  
14       out this section—

15           “(1) \$54,000,000 for fiscal year 2021; and

16           “(2) \$75,000,000 for each of fiscal years 2022  
17       through 2031.”.

18       **SEC. 105. ADVANCED ENERGY SYSTEMS.**

19       (a) ADVANCED ENERGY SYSTEMS.—Subtitle F of  
20       title IX of the Energy Policy Act of 2005 (42 U.S.C.  
21       16291 et seq.) is further amended by adding at the end  
22       the following:

23       **“SEC. 969E. ADVANCED ENERGY SYSTEMS.**

24       “(a) IN GENERAL.—The Secretary shall carry out a  
25       program of research, development, demonstration, and

1 commercial application of technologies that represent a  
2 significant change in the methods used to generate elec-  
3 tricity from fuels and that will enable a step change in  
4 performance, efficiency, and cost of electricity, and that  
5 reduce emissions from fossil fuel power generation in the  
6 following areas:

7           “(1) Supercritical carbon dioxide, with an em-  
8           phasis on developing directly fired and indirectly  
9           fired cycles in the next 10 years.

10           “(2) Advanced combustion systems, including  
11           oxy-combustion systems and chemical looping.

12           “(3) Gasification systems to enable carbon cap-  
13           ture, improve efficiency, and reduce capital and op-  
14           erating costs.

15           “(4) Thermal cycling with ramping or rapid  
16           black start capabilities that do not compromise effi-  
17           ciency or environmental performance.

18           “(5) Small-scale and modular technologies with  
19           reduced carbon dioxide outputs or carbon capture  
20           that can support incremental power generation ca-  
21           pacity needs.

22           “(6) Turbines, boilers, fuel cells, or other sys-  
23           tems that utilize hydrogen or ammonia derived from  
24           coal or natural gas to make electricity.

1           “(7) Systems that remove 98 percent or more  
2           of the carbon dioxide from the emissions of a power  
3           plant.

4           “(b) PRIORITY.—In carrying out the program under  
5           subsection (a), the Secretary shall give priority to poten-  
6           tially transformational technologies that would enable very  
7           substantial improvements in performance, efficiency, or  
8           cost of electricity as compared to the technology in exist-  
9           ence on the date of enactment of this section.

10          “(c) AUTHORIZATION OF APPROPRIATIONS.—There  
11          are authorized to be appropriated to the Secretary to carry  
12          out this section \$1,275,000,000 for each of fiscal years  
13          2022 through 2031.”.

14          (b) TECHNICAL AMENDMENT.—The table of contents  
15          for the Energy Policy Act of 2005 (Public Law 109–58;  
16          119 Stat. 600) is amended by adding at the end of the  
17          items relating to subtitle F of title IX the following:

“Sec. 969E. Advanced energy systems.”.

1 **Subtitle B—Deployment of Carbon**  
2 **Capture, Utilization, and Stor-**  
3 **age With Commercial-Scale**  
4 **Electricity Generation Facilities**

5 **SEC. 111. DEPLOYMENT OF CARBON CAPTURE, UTILIZA-**  
6 **TION, AND STORAGE TECHNOLOGY WITH**  
7 **COMMERCIAL-SCALE ELECTRICITY GENERA-**  
8 **TION FACILITIES.**

9 (a) IN GENERAL.—Subtitle B of title IV of the En-  
10 ergy Policy Act of 2005 (42 U.S.C. 15971 et seq.) is  
11 amended by adding after section 417 the following:

12 **“SEC. 418. FEDERAL SUPPORT FOR DEPLOYMENT OF CAR-**  
13 **BON CAPTURE, UTILIZATION, AND STORAGE**  
14 **WITH ELECTRICITY GENERATION.**

15 “(a) IN GENERAL.—Subject to the limitations in sub-  
16 section (b), the Secretary shall support the deployment  
17 and use of carbon capture, utilization, and storage at eligi-  
18 ble power systems by entering into contracts for dif-  
19 ferences with owners or operators of eligible power sys-  
20 tems to provide price certainty for the sale of the elec-  
21 tricity generated by, or carbon dioxide captured by, such  
22 eligible power systems to third parties.

23 “(b) LIMITATIONS.—The Secretary may not enter  
24 into contracts for differences under subsection (a)—

25 “(1) with a term of more than 30 years;

1           “(2) for the output of eligible power systems  
2 with a cumulative electricity generating capacity of  
3 more than 11 gigawatts; and

4           “(3) in a cumulative amount projected to have  
5 a value exceeding \$10,000,000,000.

6           “(c) APPLICATION.—

7           “(1) IN GENERAL.—The owner or operator of  
8 an eligible power system seeking to enter into a con-  
9 tract for differences under subsection (a) shall sub-  
10 mit to the Secretary an application at such time and  
11 in such manner as the Secretary may require.

12           “(2) CRITERIA.—In evaluating such an applica-  
13 tion, the Secretary shall consider technical, financial,  
14 and other factors that the Secretary determines ap-  
15 propriate.

16           “(d) PRIORITIZATION.—In implementing subsection  
17 (a), the Secretary shall prioritize supporting—

18           “(1) the use of carbon capture, utilization, and  
19 storage at eligible power systems covering diverse  
20 fossil fuel types and technologies, including first-of-  
21 a-kind technology for carbon capture, utilization,  
22 and storage capacity; and

23           “(2) eligible power systems with at least 5.5  
24 gigawatts of cumulative electricity generating capac-  
25 ity that will be in operation by 2030, and ensure

1 that the remaining eligible power systems receiving  
2 support will be under construction by not later than  
3 2030.

4 “(e) DEFINITIONS.—In this section:

5 “(1) POWER SYSTEM.—The term ‘power sys-  
6 tem’ means a commercial-scale electricity generating  
7 unit that utilizes fossil fuels to generate electricity  
8 that is provided to the electric grid or directly to a  
9 consumer.

10 “(2) ELIGIBLE POWER SYSTEM.—The term ‘eli-  
11 gible power system’ means a power system that—

12 “(A) is equipped with carbon capture tech-  
13 nology, or otherwise produces a separate carbon  
14 dioxide stream that is suitable for utilization or  
15 storage;

16 “(B) is designed to capture carbon dioxide  
17 that would otherwise be emitted to the atmos-  
18 phere; and

19 “(C) will utilize or store the captured car-  
20 bon dioxide, or has contracted with one or more  
21 other entities to utilize or store the captured  
22 carbon dioxide.”.

23 (b) CLERICAL AMENDMENT.—The table of contents  
24 for the Energy Policy Act of 2005 is amended by adding  
25 after the item relating to section 417 the following:

“Sec. 418. Federal support for deployment of carbon capture, utilization, and storage with electricity generation.”.

1 **Subtitle C—Federal Support for**  
2 **Commercial Deployment of Car-**  
3 **bon Capture, Utilization, and**  
4 **Storage**

5 **SEC. 121. ENHANCEMENT OF CARBON DIOXIDE SEQUE-**  
6 **STRATION CREDIT.**

7 (a) EXTENSION OF CREDIT PERIOD.—Section  
8 45Q(a) of the Internal Revenue Code of 1986 is amended  
9 by striking “12-year” each place it appears and inserting  
10 “20-year”.

11 (b) EXTENSION OF QUALIFIED FACILITY CONSTRUC-  
12 TION BEGINNING DATE.—Section 45Q(d)(1) of such Code  
13 is amended by striking “January 1, 2026” and inserting  
14 “January 1, 2036”.

15 (c) ENHANCEMENT OF CREDIT VALUE.—

16 (1) Section 45Q(b)(1)(A)(ii)(I) is amended by  
17 striking “\$50” and inserting “\$85”.

18 (2) Section 45Q(b)(1)(A)(ii)(II) is amended by  
19 striking “\$35” and inserting “\$70”.

20 (d) EFFECTIVE DATE.—The amendments made by  
21 this section shall apply to carbon dioxide captured after  
22 December 31, 2020.

1 **SEC. 122. REFORM OF LOAN GUARANTEE PROGRAM.**

2 Section 1703 of the Energy Policy Act of 2005 (42  
3 U.S.C. 16513) is amended—

4 (1) by striking subsection (e) and inserting the  
5 following:

6 “(e) QUALIFICATION OF FACILITIES RECEIVING TAX  
7 CREDITS OR FINANCIAL ASSISTANCE.—Notwithstanding  
8 any other provision of law, a project that receives tax cred-  
9 its or other financial assistance for clean coal technology  
10 shall not be disqualified from receiving a guarantee under  
11 this subchapter.”; and

12 (2) by inserting the following new subsection  
13 after subsection (e):

14 “(f) IMPLEMENTATION.—In implementing the authority  
15 under this section with respect to loan guarantees issued  
16 after the date of enactment of the Clean Energy Future  
17 Through Innovation Act of 2021, the Secretary shall—

18 “(1) adjust fees and application requirements to  
19 the scale of a project to ensure that the costs of pre-  
20 paring and submitting an application are not an  
21 undue barrier to participation by smaller, lower risk  
22 projects;

23 “(2) ensure that program credit rating require-  
24 ments do not, as applied, act as an obstacle to par-  
25 ticipation in the loan guarantee program by first-of-  
26 a-kind projects, consistent with the purpose of the

1 loan guarantee program to enable debt financing for  
2 first-of-a-kind projects that would not otherwise have  
3 access to commercial debt markets; and

4 “(3) for first-of-a-kind projects, cover the cost  
5 of the guarantee with appropriated funds rather  
6 than requiring the borrower to pay some or all of  
7 the cost of the guarantee under section 1702(b).”.

8 **SEC. 123. PRIVATE ACTIVITY BONDS FOR CARBON DIOXIDE**  
9 **CAPTURE FACILITIES.**

10 (a) IN GENERAL.—Section 142(a) of the Internal  
11 Revenue Code of 1986 is amended by striking “or” at the  
12 end of paragraph (14), by striking the period at the end  
13 of paragraph (15) and inserting “, or”, and by adding at  
14 the end the following new paragraph:

15 “(16) qualified carbon dioxide capture facili-  
16 ties.”.

17 (b) QUALIFIED CARBON DIOXIDE CAPTURE FACIL-  
18 ITY.—Section 142 of such Code is amended by adding at  
19 the end the following new subsections:

20 “(n) QUALIFIED CARBON DIOXIDE CAPTURE FACIL-  
21 ITY.—

22 “(1) IN GENERAL.—For purposes of subsection  
23 (a)(16), the term ‘qualified carbon dioxide capture  
24 facility’ means the eligible components of an indus-  
25 trial carbon dioxide facility.

1           “(2) DEFINITIONS.—For purposes of this sub-  
2 section—

3           “(A) ELIGIBLE COMPONENT.—The term  
4 ‘eligible component’ means, with respect to any  
5 industrial carbon dioxide facility, any compo-  
6 nent installed in such facility that—

7           “(i) satisfies the requirements under  
8 paragraph (3), and

9           “(ii)(I) is used for the purpose of cap-  
10 ture, treatment and purification, compres-  
11 sion, transportation, or on-site storage of  
12 carbon dioxide produced by such facility,  
13 or

14           “(II) is integral or functionally related  
15 and subordinate to a process described in  
16 section 48B(c)(2) (determined by sub-  
17 stituting ‘carbon dioxide’ for ‘carbon mon-  
18 oxide’).

19           “(B) INDUSTRIAL CARBON DIOXIDE FACIL-  
20 ITY.—

21           “(i) IN GENERAL.—The term ‘indus-  
22 trial carbon dioxide facility’ means a facil-  
23 ity that emits carbon dioxide (including  
24 from any fugitive emissions source) that is

1 created as a result of any of the following  
2 processes:

3 “(I) Fuel combustion for elec-  
4 tricity generation or other purposes.

5 “(II) Gasification for electricity  
6 generation or other purposes.

7 “(III) Bioindustrial.

8 “(IV) Fermentation.

9 “(V) Any manufacturing industry  
10 described in section 48B(c)(7).

11 “(ii) EXCEPTIONS.—Such term shall  
12 not include—

13 “(I) any geological gas facility, or

14 “(II) any air separation unit that  
15 does not qualify as gasification equip-  
16 ment or is not a necessary component  
17 of an oxy-fuel combustion process, a  
18 supercritical carbon dioxide process,  
19 or other advanced power system.

20 “(iii) GEOLOGICAL GAS FACILITY.—  
21 The term ‘geological gas facility’ means a  
22 facility that—

23 “(I) produces a raw product con-  
24 sisting of gas or mixed gas and liquid  
25 from a geological formation,

1                   “(II) transports or removes im-  
2                   purities from such product, or

3                   “(III) separates such product  
4                   into its constituent parts.

5                   “(3) CAPTURE AND STORAGE REQUIREMENT.—

6                   For purposes of this subsection—

7                   “(A) IN GENERAL.—Except as provided in  
8                   subparagraph (B), a component shall not be  
9                   treated as meeting the requirements of this  
10                  paragraph with respect to an industrial carbon  
11                  dioxide facility unless such component has a  
12                  capture and storage percentage that is at least  
13                  65 percent.

14                  “(B) EXCEPTION.—In the case of an in-  
15                  dustrial carbon dioxide facility with a capture  
16                  and storage percentage that is less than 65 per-  
17                  cent, a component with respect to such facility  
18                  shall not be treated as meeting the require-  
19                  ments of this paragraph unless the percentage  
20                  of the cost of such component that is financed  
21                  by tax-exempt bonds is not greater than such  
22                  capture and storage percentage.

23                  “(C) CAPTURE AND STORAGE PERCENT-  
24                  AGE.—

1           “(i) IN GENERAL.—The capture and  
2 storage percentage shall be an amount, ex-  
3 pressed as a percentage, equal to the  
4 quotient of—

5                   “(I) the total metric tons of car-  
6 bon dioxide annually captured, trans-  
7 ported, and injected into a facility for  
8 geologic storage, or an enhanced oil or  
9 gas recovery well followed by geologic  
10 storage, divided by

11                   “(II) the total metric tons of car-  
12 bon dioxide which would otherwise be  
13 released into the atmosphere each  
14 year as industrial emission of green-  
15 house gas if the component were not  
16 installed in the industrial carbon diox-  
17 ide facility.

18           “(ii) LIMITED APPLICATION OF ELIGI-  
19 BLE COMPONENTS.—In the case of eligible  
20 components that are designed to capture  
21 carbon dioxide solely from specific sources  
22 of emissions or portions thereof within an  
23 industrial carbon dioxide facility, the cap-  
24 ture and storage percentage under this  
25 subparagraph shall be determined based

1                   only on such specific sources of emissions  
2                   or portions thereof.

3           “(o) OTHER REQUIREMENTS.—(1) An issue shall not  
4 be treated as an issue under subsection (a) unless each  
5 entity that receives some or all of the proceeds from the  
6 issue for construction, alteration or repair work agrees  
7 that such work shall be performed in accordance with the  
8 requirements of subchapter IV of chapter 31 of title 40,  
9 United States Code.

10          “(2) With respect to enforcement of the requirements  
11 in paragraph (1), rules similar to rules of section 503(c)  
12 of the Clean Energy Future Through Innovation Act of  
13 2021 shall be applied by substituting ‘issuer’ for ‘tax-  
14 payer’.”.

15          (c) VOLUME CAP.—Section 146(g)(4) of such Code  
16 is amended by striking “paragraph (11) of section 142(a)  
17 (relating to high-speed intercity rail facilities)” and insert-  
18 ing “paragraph (11) or paragraph (16) of section 142(a)”.

19          (d) CLARIFICATION OF PRIVATE BUSINESS USE.—  
20 Section 141(b)(6) of such Code is amended by adding at  
21 the end the following new subparagraph:

22                   “(C) CLARIFICATION RELATING TO QUALI-  
23                   FIED CARBON DIOXIDE CAPTURE FACILITIES.—  
24                   For purposes of this subsection, the sale of car-  
25                   bon dioxide produced by a qualified carbon di-

1 oxide capture facility (as defined in section  
2 142(n)) which is owned by a governmental unit  
3 shall not constitute private business use.”.

4 (e) EFFECTIVE DATE.—The amendments made by  
5 this section shall apply to obligations issued after the date  
6 of enactment of this Act.

7 **SEC. 124. EXTENSION OF PUBLICLY TRADED PARTNERSHIP**  
8 **OWNERSHIP STRUCTURE.**

9 (a) IN GENERAL.—Section 7704(d)(1)(E) of the In-  
10 ternal Revenue Code of 1986 is amended—

11 (1) by striking “income and gains derived from  
12 the exploration” and inserting “income and gains  
13 derived from any of the following:

14 “(i) The exploration”,

15 (2) by striking the comma at the end and in-  
16 serting a period, and

17 (3) by adding at the end the following:

18 “(ii) The production, storage, or  
19 transportation of any fuel which—

20 “(I) uses carbon dioxide captured  
21 from an anthropogenic source or the  
22 atmosphere as its primary feedstock,  
23 and

24 “(II) is determined by the Sec-  
25 retary, in consultation with the Sec-

1           retary of Energy and the Adminis-  
2           trator of the Environmental Protec-  
3           tion Agency, to achieve a reduction of  
4           not less than a 60 percent in lifecycle  
5           greenhouse gas emissions (as defined  
6           in section 211(o)(1)(H) of the Clean  
7           Air Act) compared to baseline lifecycle  
8           greenhouse gas emissions (as defined  
9           in section 211(o)(1)(C) of such Act).  
10          This clause shall not apply to any fuel  
11          which uses as its primary feedstock carbon  
12          dioxide which is deliberately released from  
13          naturally-occurring subsurface springs.

14                 “(iii) The production of any product  
15          or the generation of electric power from a  
16          project—

17                         “(I) which meets the require-  
18                         ments of subparagraphs (A) and (B)  
19                         of section 48B(c)(1), and

20                         “(II) not less than 75 percent of  
21                         the total carbon dioxide emissions of  
22                         which is qualified carbon oxide (as de-  
23                         fined in section 45Q(c)) which is dis-  
24                         posed of or utilized as provided in  
25                         paragraph (6).

1           “(iv) The generation or storage of  
2           electric power (including associated income  
3           from the sale or marketing of energy, ca-  
4           pacity, resource adequacy, and ancillary  
5           services) produced from any power genera-  
6           tion facility which is, or from any power  
7           generation unit within, a qualified facility  
8           under section 45Q(d) and not less than 50  
9           percent (30 percent in the case of a facility  
10          or unit placed in service before January 1,  
11          2017) of the total carbon dioxide emissions  
12          of which is qualified carbon oxide which is  
13          disposed of or used as provided in para-  
14          graph (7).

15          “(v) The sale of any good or service  
16          from any facility (other than a power gen-  
17          eration facility) which is a qualified facility  
18          described in section 45Q(c) and the cap-  
19          tured qualified carbon oxide (as so defined)  
20          of which is disposed of as provided in para-  
21          graph (6).”.

22          (b) DISPOSAL AND UTILIZATION OF CAPTURED CAR-  
23          BON DIOXIDE.—Section 7704(d) of such Code is amended  
24          by adding at the end the following new paragraphs:

1           “(6) DISPOSAL AND UTILIZATION OF CAPTURED  
2 CARBON DIOXIDE.—For purposes of clauses (iii)(II)  
3 and (iv) of paragraph (1)(E), carbon dioxide is dis-  
4 posed of or used as provided in this paragraph if  
5 such carbon dioxide is—

6           “(A) placed into secure geological storage  
7 (as determined under section 45Q(f)(2)),

8           “(B) used as a tertiary injectant (as de-  
9 fined in section 45Q(e)(3)) in a qualified en-  
10 hanced oil or natural gas recovery project (as  
11 defined in section 45Q(e)(2)) and placed into  
12 secure geological storage (as so determined),

13           “(C) fixed through photosynthesis or  
14 chemosynthesis (including through the growing  
15 of algae or bacteria),

16           “(D) chemically converted to a material or  
17 chemical compound in which it is securely  
18 stored, or

19           “(E) used for any other purpose which the  
20 Secretary determines has the potential to  
21 strengthen or significantly develop a competitive  
22 market for carbon dioxide captured from man-  
23 made sources.

24           “(7) OTHER REQUIREMENTS.—(A) Income and  
25 gains under subsection (d)(1)(E) shall not be treated

1 as “qualifying income” under this section unless the  
2 publicly traded partnership provides assurances to  
3 the Secretary that any construction, alteration, or  
4 repair work associated with such income and gains  
5 shall be performed in accordance with the require-  
6 ments of subchapter IV of chapter 31 of title 40,  
7 United States Code.

8 “(B) With respect to enforcement of the re-  
9 quirements in subparagraph (A), rules similar to  
10 rules of section 503(c) of the Clean Energy Future  
11 Through Innovation Act of 2021 shall be applied by  
12 substituting ‘publicly traded partnership’ for ‘tax-  
13 payer’.”.

14 (c) EFFECTIVE DATE.—The amendments made by  
15 this section shall take effect on the date of the enactment  
16 of this Act, in taxable years ending after such date.

17 **SEC. 125. PRODUCTION TAX CREDIT FOR CERTAIN ELEC-**  
18 **TRICITY GENERATION USING CARBON CAP-**  
19 **TURE UTILIZATION AND STORAGE.**

20 (a) IN GENERAL.—Subpart D of part IV of sub-  
21 chapter A of chapter 1 of the Internal Revenue Code of  
22 1986 is amended by adding at the end the following new  
23 section:

1 **“SEC. 45U. ELECTRICITY PRODUCED USING CARBON CAP-**  
2 **TURE UTILIZATION AND STORAGE TECH-**  
3 **NOLOGY.**

4 “(a) GENERAL RULE.—For purposes of section 38,  
5 the carbon capture production credit for any taxable year  
6 is an amount equal to—

7 “(1) in the case of a qualified facility using fos-  
8 sil fuels, the product of—

9 “(A) the megawatt hours of electricity—

10 “(i) produced by the taxpayer at a  
11 qualified facility during the 20-year period  
12 beginning on the date the facility was  
13 originally placed in service, and

14 “(ii) sold by the taxpayer to an unre-  
15 lated person during the taxable year, mul-  
16 tiplied by

17 “(B)(i) \$30 per megawatt hour in the case  
18 of a qualified facility storing carbon in secure  
19 geological storage, or

20 “(ii) \$24 per megawatt hour in the case of  
21 a qualified facility using captured carbon oxide  
22 as a tertiary injectant in a qualified enhanced  
23 oil or natural gas recovery project, multiplied by

24 “(C) the discount factor,

1           “(2) in the case of electricity generation facili-  
2 ties using exclusively qualified hydrogen, qualified  
3 ammonia, or qualified blends, the product of—

4                   “(A) the megawatt hours of electricity—

5                           “(i) produced by the taxpayer at a  
6 qualified facility during the 20-year period  
7 beginning on the date the facility was  
8 originally placed in service, and

9                           “(ii) sold by the taxpayer to an unre-  
10 lated person during the taxable year, mul-  
11 tiplied by

12                           “(B) \$100 per megawatt hour.

13           “(b) DEFINITIONS.—For purposes of this section:

14                   “(1) DISCOUNT FACTOR.—The term ‘discount  
15 factor’ means an amount equal to 90 divided by the  
16 annual carbon dioxide emissions rate expressed in  
17 pounds per megawatt-hour for a qualified facility,  
18 except that—

19                           “(A) if the annual carbon dioxide emis-  
20 sions rate for a qualified facility is less than 90  
21 pounds per megawatt-hour, the discount factor  
22 is equal to 1, and

23                           “(B) if the annual carbon dioxide emis-  
24 sions rate for a qualified facility is greater 180

1           pounds per megawatt-hour, the discount factor  
2           is equal to 0.

3           “(2) QUALIFIED AMMONIA.—The term ‘quali-  
4           fied ammonia’ means ammonia fuel produced with  
5           less than 17.5 pounds of carbon dioxide emissions  
6           per million Btu of gross fuel heating value.

7           “(3) QUALIFIED BLEND.—The term ‘qualified  
8           blend’ means a blend of qualified hydrogen or quali-  
9           fied ammonia with fossil fuel in which the fossil fuel  
10          provides no more than 30 percent of the heating  
11          value input.

12          “(4) QUALIFIED FACILITY.—The term ‘quali-  
13          fied facility’ means an electricity generation plant  
14          that—

15                 “(A) is equipped with carbon capture  
16                 equipment, the construction of which com-  
17                 menced before January 1, 2033,

18                 “(B) captures carbon oxide using carbon  
19                 capture equipment,

20                 “(C) stores captured carbon oxide in se-  
21                 cure geological storage or uses captured carbon  
22                 oxide as a tertiary injectant in a qualified en-  
23                 hanced oil or natural gas recovery project, and

24                 “(D) has not been the basis for a credit re-  
25                 ceived under section 45Q.

1           “(5) QUALIFIED HYDROGEN.—The term ‘quali-  
2           fied hydrogen’ means hydrogen fuel produced with  
3           less than 17.5 pounds of carbon dioxide emissions  
4           per million Btu of gross fuel heating value.”.

5           (b) PART OF GENERAL BUSINESS CREDIT.—Section  
6 38(b) of such Code is amended by striking “plus” at the  
7 end of paragraph (32), by striking the period at the end  
8 of paragraph (33) and inserting “, plus”, and by adding  
9 at the end the following new paragraph:

10           “(34) the carbon capture production credit  
11           under section 45U(a).”.

12           (c) CLERICAL AMENDMENT.—The table of sections  
13 for subpart D of part IV of subchapter A of chapter 1  
14 is amended by adding at the end the following new item:

“Sec. 45U. Electricity produced using carbon capture utilization and storage  
technology.”.

15           (d) EFFECTIVE DATE.—The amendments made by  
16 this section shall apply with respect to electricity produced  
17 and sold after the date of the enactment of this Act.

18 **SEC. 126. ELECTIVE PAYMENT OF CREDIT.**

19           (a) Subchapter B of chapter 65 of the Internal Rev-  
20 enue Code of 1986 is amended by adding at the end the  
21 following new section:

1 **“SEC. 6431. ELECTIVE PAYMENT OF CREDITS RELATING TO**  
2 **CARBON OXIDE SEQUESTRATION.**

3 “(a) **ELECTION.**—In the case of a taxpayer making  
4 an election (at such time and in such manner as the Sec-  
5 retary may provide) under this section with respect to any  
6 portion of an applicable credit, such taxpayer shall be  
7 treated as making a payment against the tax imposed by  
8 subtitle A for the taxable year equal to the amount of such  
9 portion.

10 “(b) **DEFINITIONS AND SPECIAL RULES.**—For pur-  
11 poses of this section—

12 “(1) **GOVERNMENTAL ENTITIES TREATED AS**  
13 **TAXPAYERS.**—In the case of an election under this  
14 section—

15 “(A) any State or local government, or a  
16 political subdivision thereof, or

17 “(B) an Indian Tribal government  
18 shall be treated as a taxpayer for purposes of this  
19 section and determining any applicable credit.

20 “(2) **APPLICABLE CREDIT.**—The term ‘applica-  
21 ble credit’ means each of the following credits that  
22 would (without regard to this section) be determined  
23 with respect to the taxpayer:

24 “(A) A carbon oxide sequestration credit  
25 under section 45Q.

1           “(B) A carbon capture production credit  
2           under section 45U.

3           “(3) INDIAN TRIBAL GOVERNMENT.—The term  
4           ‘Indian Tribal government’ shall have the meaning  
5           given such term by section 139E.

6           “(4) TIMING.—The payment described in sub-  
7           section (a) shall be treated as made on—

8                   “(A) in the case of any government, or po-  
9                   litical subdivision, to which paragraph (1) ap-  
10                   plies and for which no return is required under  
11                   section 6011 or 6033(a), the later of the date  
12                   that a return would be due under section  
13                   6033(a) if such government or subdivision were  
14                   described in that section or the date on which  
15                   such government or subdivision submits a claim  
16                   for credit or refund (at such time and in such  
17                   manner as the Secretary shall provide), and

18                   “(B) in any other case, the later of the due  
19                   date of the return of tax for the taxable year  
20                   or the date on which such return is filed.

21           “(5) WAIVER OF SPECIAL RULES.—In the case  
22           of an election under this section, the determination  
23           of any applicable credit shall be without regard to  
24           paragraphs (3) and (4)(A)(i) of section 50(b).



1           (1) in paragraph (1)(B)(ii)(I), by inserting  
2           “and the carbon dioxide sequestration credit deter-  
3           mined under section 45Q” after “section 41(a)”,  
4           and

5           (2) in paragraph (1)(B)(i), by inserting “(other  
6           than the credit allowed under section 38 for the tax-  
7           able year which is properly allocable to the credit for  
8           carbon oxide sequestration determined under section  
9           45Q)” after “credits allowed under this chapter”.

10          (b) EFFECTIVE DATE.—The amendments made by  
11 this section shall take effect as if included in section  
12 41119 of the Bipartisan Budget Act of 2018.

13 **SEC. 128. MODIFICATION OF MERCHANT BANKING INVEST-**  
14 **MENT REGULATION.**

15          (a) EXTENDED HOLDING PERIOD FOR CARBON CAP-  
16 TURE PROJECTS.—Section 4(c) of the Bank Holding  
17 Company Act of 1956 (12 U.S.C. 1843(c)) is amended  
18 by inserting after paragraph (14) the following new para-  
19 graph:

20           “(15) shares owned directly or indirectly in a  
21           company that is the person to whom the credit for  
22           carbon oxide sequestration in section 45Q of the In-  
23           ternal Revenue Code of 1986 is attributable pursu-  
24           ant to subsection (f)(3) of such section, but such  
25           shares shall be disposed of within a period of time

1 that equals the sum of the number of years in sub-  
2 section (a)(3)(A) of such section and the number of  
3 years in the recapture period as defined in such sec-  
4 tion or regulations or other guidance prescribed  
5 under such section.”.

6 (b) EFFECTIVE DATE.—The amendments made by  
7 this section shall apply to taxable years beginning after  
8 December 31, 2020.

9 **Subtitle D—Support for Carbon Di-**  
10 **oxide Transportation and Se-**  
11 **questration Infrastructure**

12 **SEC. 131. FACILITIES FOR CARBON DIOXIDE TRANSPOR-**  
13 **TATION AND SEQUESTRATION.**

14 (a) IN GENERAL.—Subtitle B of title IV of the En-  
15 ergy Policy Act of 2005 (42 U.S.C. 15971 et seq.) is fur-  
16 ther amended by adding after section 418 (as added by  
17 this Act) the following:

18 **“SEC. 419. SECURING GEOLOGIC RESERVOIRS FOR STOR-**  
19 **AGE OF CARBON DIOXIDE.**

20 “(a) IN GENERAL.—The Secretary shall carry out a  
21 program to—

22 “(1) identify geological formations that are ca-  
23 pable of sequestering, cumulatively, at least  
24 250,000,000 tons of carbon dioxide with a target  
25 cost of less than \$10 per ton;

1           “(2) assess the cost of developing and operating  
2 carbon dioxide sequestration facilities at the geologi-  
3 cal formations identified under paragraph (1); and

4           “(3) support the development of such carbon di-  
5 oxide sequestration facilities by providing grants or  
6 other appropriate financial assistance to carbon di-  
7 oxide sequestration facility developers to—

8                   “(A) secure property rights that are nec-  
9 essary to enable carbon dioxide sequestration in  
10 such geologic formations; and

11                   “(B) obtain necessary permits and ap-  
12 proval to enable carbon dioxide sequestration in  
13 such geologic formations.

14           “(b) GEOGRAPHIC DIVERSITY.—The Secretary shall  
15 carry out subsection (a) with the goal of supporting devel-  
16 opment of carbon dioxide sequestration facilities that are  
17 capable of storing significant volumes of carbon dioxide  
18 at reasonable costs in each of the regions covered by the  
19 regional carbon sequestration partnerships established by  
20 the Secretary.

21           “(c) APPLICATION.—An entity seeking a grant or  
22 other appropriate financial assistance provided under sub-  
23 section (a)(3) shall submit to the Secretary an application  
24 at such time and in such manner as the Secretary may  
25 require.



1 infrastructure that is of significant length and significant  
2 throughput capacity.

3 “(d) COST SHARING.—The Secretary shall consider  
4 the grants provided under subsection (a) to be subject to  
5 the cost share requirement for demonstration and com-  
6 mercial application activities under section 988(e).

7 “(e) AUTHORIZATION OF APPROPRIATIONS.—There  
8 are authorized to be appropriated to the Secretary to carry  
9 out this section and section 419 \$2,000,000,000 for each  
10 of fiscal years 2022 through 2031.”.

11 (b) CLERICAL AMENDMENT.—The table of contents  
12 for the Energy Policy Act of 2005 is further amended by  
13 adding after the item relating to section 418 (as added  
14 by this Act) the following:

“Sec. 419. Securing geologic reservoirs for storage of carbon dioxide.  
“Sec. 420. Carbon dioxide sequestration infrastructure development.”.

15 **SEC. 132. CARBON DIOXIDE SEQUESTRATION UTILITIES.**

16 (a) IN GENERAL.—The Secretary, in collaboration  
17 with the Secretary of Transportation and the Adminis-  
18 trator of the Environmental Protection Agency, as appro-  
19 priate, may provide technical assistance to a State that  
20 is seeking to—

21 (1) establish a government-owned carbon diox-  
22 ide sequestration utility; or

23 (2) regulate a privately owned carbon dioxide  
24 sequestration utility.

1 (b) TECHNICAL ASSISTANCE.—Technical assistance  
2 provided under subsection (a) may include—

3 (1) with respect to a government-owned carbon  
4 dioxide sequestration utility—

5 (A) conducting engineering studies to sup-  
6 port the development of a carbon dioxide se-  
7 questration facility; and

8 (B) identifying potential carbon dioxide  
9 transportation routes; and

10 (2) with respect to State regulation of a pri-  
11 vately owned carbon dioxide sequestration utility—

12 (A) helping with developing regulations for  
13 any privately owned carbon dioxide sequestra-  
14 tion utility, including with respect to the devel-  
15 opment of a permitting system; and

16 (B) assisting with developing regulations  
17 for—

18 (i) services provided by a privately  
19 owned carbon dioxide sequestration utility;  
20 and

21 (ii) the setting of rates charged for  
22 such services.

23 (c) REPORT.—Not later than 1 year after the date  
24 of enactment of this section, the Secretary shall submit  
25 to Congress a report that—

1           (1) characterizes Federal, State, and local regu-  
2           lations that apply to the development and operation  
3           of carbon dioxide transportation infrastructure and  
4           sequestration facilities;

5           (2) identifies any gaps in applicable regulations  
6           that need to be addressed to ensure the safe and ef-  
7           fective operation of carbon dioxide transportation in-  
8           frastructure and sequestration facilities;

9           (3) evaluates whether regulation of the rates  
10          and terms of service for carbon dioxide transpor-  
11          tation service or sequestration service is necessary to  
12          ensure fair access to such services;

13          (4) evaluates whether the use of the right of  
14          eminent domain to develop carbon dioxide transpor-  
15          tation infrastructure and sequestration facilities is  
16          consistent with the public interest; and

17          (5) provides any recommended changes to Fed-  
18          eral law that would support the development and use  
19          of carbon dioxide transportation infrastructure and  
20          sequestration facilities consistent with the public in-  
21          terest.

22          (d) CARBON DIOXIDE SEQUESTRATION UTILITY DE-  
23          FINED.—The term “carbon dioxide sequestration utility”  
24          means any organization that provides carbon dioxide  
25          transportation or sequestration service.

1 **TITLE II—INNOVATION IN RE-**  
2 **NEWABLE ENERGY, ENERGY**  
3 **EFFICIENCY, AND STORAGE**

4 **SEC. 201. ESTABLISHMENT OF TECHNOLOGY PERFORM-**  
5 **ANCE AND COST TARGETS.**

6 (a) IN GENERAL.—Not later than 1 year after the  
7 date of enactment of this section, the Secretary shall es-  
8 tablish technology performance and cost targets for three  
9 consecutive 5-year periods to address existing gaps in  
10 technology, with the first such period starting on the date  
11 of enactment of this section and the last such period end-  
12 ing on the date that is 15 years following such date of  
13 enactment.

14 (b) TARGETS.—Technology and performance cost  
15 targets shall be established for each of the following tech-  
16 nology categories:

17 (1) Advanced renewable power technologies,  
18 which include—

19 (A) large-scale, novel renewable power  
20 plants;

21 (B) renewable hydrogen power plants, in-  
22 cluding plants for which the hydrogen comes  
23 from renewable natural gas or biogas;

24 (C) on-shore or off-shore wind power;

25 (D) thermal or photovoltaic solar power;

1 (E) hydropower;  
2 (F) geothermal power;  
3 (G) biomass power; and  
4 (H) advanced renewable energy manufac-  
5 turing techniques.

6 (2) Mechanical, chemical, and thermal energy  
7 storage technologies, which include—

8 (A) advanced grid-scale energy storage  
9 technologies with storage durations in the range  
10 of 10 to 50 hours; and

11 (B) grid-scale energy storage projects that  
12 can economically balance electricity supply and  
13 demand across seasons.

14 (3) Electricity transmission technologies, which  
15 include underground high-voltage direct current elec-  
16 tricity transmission.

17 (4) Commercial, industrial, and residential en-  
18 ergy efficiency technologies, which include—

19 (A) retrofit packages that reduce the en-  
20 ergy used by an average single-family home by  
21 at least 50 percent at a cost of no more than  
22 \$25,000 per such home;

23 (B) smart heating, ventilation, and air con-  
24 ditioning control technologies that—

1 (i) can be used in commercial build-  
2 ings that have between 5,000 and 30,000  
3 square feet of floor area;

4 (ii) can reduce heating, ventilation,  
5 and air conditioning energy consumption  
6 by an average of at least 20 percent com-  
7 pared to average commercial buildings;

8 (iii) yield energy cost savings that can  
9 provide at least a 50 percent annual return  
10 on the original investment; and

11 (iv) may include a cloud-based infor-  
12 mation technology;

13 (C) those technologies that the Secretary  
14 identifies as having the ability to improve en-  
15 ergy efficiency or reduce emissions in heavy in-  
16 dustries, which include those that produce or  
17 refine aluminum, steel, cement, oil, or fertilizer;  
18 and

19 (D) flexible load technology improvements  
20 to reduce peak demand.

21 (5) Industrial process and building electrifica-  
22 tion technologies, which include—

23 (A) heat pump space heaters;

24 (B) heat pump water heaters;

25 (C) induction stoves; and

1 (D) advanced industrial process heat tech-  
2 nologies.

3 **SEC. 202. ADVANCED INNOVATION AND COMMERCIALIZA-**  
4 **TION PROGRAM.**

5 (a) IN GENERAL.—The Secretary, in collaboration  
6 with the National Laboratories, other Federal agencies,  
7 and private sector and university partners as the Secretary  
8 determines necessary, shall establish a program, to be  
9 known as the “Advanced Innovation and Commercializa-  
10 tion Program”, to carry out research, development, and  
11 demonstration of technology that meets the targets estab-  
12 lished for those technologies identified in section 201(b).

13 (b) EARLY DEPLOYMENT.—

14 (1) IN GENERAL.—The Secretary shall establish  
15 a program to provide grants for early deployment of  
16 the technologies demonstrated under the Advanced  
17 Innovation and Commercialization program under  
18 this section.

19 (2) AUTHORIZATION OF APPROPRIATIONS.—

20 There is authorized to be appropriated to carry out  
21 this subsection \$3,000,000,000 for each of fiscal  
22 years 2022 through 2031.

23 (c) FEDERAL PROCUREMENT.—

24 (1) IN GENERAL.—The Secretary, in collabora-  
25 tion with the Secretary of Defense and the Adminis-

1       trator of the General Services Administration, shall  
2       establish Federal procurement goals and deadlines  
3       for achieving such goals for those technologies iden-  
4       tified in section 201(b).

5               (2) FEDERAL ENERGY AND ADVANCED TECH-  
6       NOLOGY ENERGY PROCUREMENT.—The Secretary, in  
7       collaboration with the Secretary of Defense and the  
8       Administrator of General Services, shall—

9               (A) through administrative and regulatory  
10       actions, improve Federal procurement of the  
11       technologies described in paragraph (1);

12              (B) identify and report on barriers to im-  
13       proving Federal procurement of energy and  
14       technologies that require legislative changes;  
15       and

16              (C) take due regard of the recommenda-  
17       tions from the 2016 report entitled “Secretary  
18       of Energy Advisory Board Report of the Task  
19       Force on Federal Energy Management”.

20       (d) AUTHORIZATION OF APPROPRIATIONS.—There  
21       are authorized to be appropriated to carry out subsection

22       (a) the following:

23              (1) With respect to the advanced renewable en-  
24       ergy technologies projects described in section

1 201(b)(1), \$2,000,000,000 for each of fiscal years  
2 2022 through 2031.

3 (2) With respect to the energy storage tech-  
4 nologies projects described in section 201(b)(2),  
5 \$400,000,000 for each of fiscal years 2022 through  
6 2031.

7 (3) With respect to the transmission tech-  
8 nologies and projects described in section 201(b)(3),  
9 \$600,000,000 for each of fiscal years 2022 through  
10 2031.

11 (4) With respect to the commercial, industrial,  
12 and residential energy efficiency technologies de-  
13 scribed in section 201(b)(4), \$1,000,000,000 for  
14 each of fiscal years 2022 through 2031.

15 (5) With respect to the industrial process and  
16 building electrification technologies described in sec-  
17 tion 201(b)(5), \$1,000,000,000 for each of fiscal  
18 years 2022 through 2031.

19 **SEC. 203. UPDATING MANUFACTURED HOMES.**

20 (a) UPDATING MANUFACTURED HOMES.—Not later  
21 than one year after the date of enactment of this section,  
22 the Secretary shall establish a program to provide grants  
23 and technical assistance to individuals or businesses to fa-  
24 cilitate the replacement of inefficient manufactured homes  
25 with efficient manufactured homes.

1 (b) DEFINITIONS.—In this section:

2 (1) EFFICIENT MANUFACTURED HOME.—The  
3 term “efficient manufactured home” means a manu-  
4 factured home for which the Energy Star label may  
5 be used in accordance with section 324A of the En-  
6 ergy Policy and Conservation Act (42 U.S.C.  
7 6294a).

8 (2) INEFFICIENT MANUFACTURED HOME.—The  
9 term “inefficient manufactured home” means a  
10 manufactured home that was manufactured before  
11 June 1976.

12 (3) MANUFACTURED HOME.—The term “manu-  
13 factured home” has the meaning given such term in  
14 section 603 of the Housing and Community Devel-  
15 opment Act of 1974 (42 U.S.C. 5402).

16 (c) AUTHORIZATION.—There is authorized to be ap-  
17 propriated to carry out this section \$2,500,000,000 for  
18 each of fiscal years 2022 through 2031, to remain avail-  
19 able until expended.

20 **SEC. 204. INVESTMENT TAX CREDITS FOR ENERGY BAT-**  
21 **TERY STORAGE, OFFSHORE WIND, AND CER-**  
22 **TAIN HYDROPOWER TECHNOLOGIES.**

23 (a) IN GENERAL.—Section 48(a) of the Internal Rev-  
24 enue Code of 1986 is amended—

25 (1) by striking subparagraph (5)(F), and

1           (2) in paragraph (3)(A), by striking “or” at the  
2           end of clause (vii), and by adding at the end the fol-  
3           lowing new clauses:

4                   “(ix) equipment which generates wind  
5                   energy from an offshore facility,

6                   “(x) energy storage equipment,

7                   “(xi) eligible hydroelectric equipment,

8                   or

9                   “(xii) equipment which generates geo-  
10                  thermal electricity through an enhanced  
11                  geothermal system.”.

12           (b) ALLOWANCE OF 30 PERCENT CREDIT.—

13                   (1) IN GENERAL.—Section 48(a)(2)(A)(i)(II) of  
14                   the Internal Revenue Code of 1986 is amended by  
15                   striking “paragraph (3)(A)(i)” and inserting “clause  
16                   (i), (ix), (x), (xi), or (xii) of paragraph (3)(A)”.

17                   (2) PHASEOUT.—Section 48(a)(6) of such Code  
18                   is amended—

19                           (A) by striking “solar energy” in the head-  
20                           ing and inserting “certain”, and

21                           (B) by striking “paragraph (3)(A)(i)” each  
22                           place it appears and inserting “clause (i), (ix),  
23                           (x), (xi), or (xii) of paragraph (3)(A)”.

24           (c) DEFINITIONS.—

1           (1) ENERGY CREDIT.—Section 48(c) of the In-  
2           ternal Revenue Code of 1986 is amended by adding  
3           at the end the following new paragraphs:

4           “(6) QUALIFIED OFFSHORE WIND PROPERTY.—

5           “(A) IN GENERAL.—The term ‘qualified  
6           offshore wind property’ means an offshore facil-  
7           ity using wind to produce electricity.

8           “(B) OFFSHORE FACILITY.—The term  
9           ‘offshore facility’ means any facility located in  
10          the inland navigable waters of the United  
11          States, including the Great Lakes, or in the  
12          coastal waters of the United States, including  
13          the territorial seas of the United States, the ex-  
14          clusive economic zone of the United States, and  
15          the outer Continental Shelf of the United  
16          States.

17          “(7) ENERGY STORAGE EQUIPMENT.—The term  
18          ‘energy storage equipment’ means equipment which  
19          receives, stores, and delivers energy using batteries,  
20          compressed air, pumped hydropower, hydrogen stor-  
21          age (including hydrolysis and electrolysis), thermal  
22          energy storage, regenerative fuel cells, flywheels, ca-  
23          pacitors, superconducting magnets, or other tech-  
24          nologies identified by the Secretary in consultation

1 with the Secretary of Energy, and which has a ca-  
2 pacity of not less than 5 kilowatt hours.

3 “(8) ELIGIBLE HYDROELECTRIC EQUIPMENT.—  
4 The term ‘eligible hydroelectric equipment’ means  
5 equipment used for the generation of electricity in-  
6 stalled at a dam which—

7 “(A) was placed in service before the date  
8 of the enactment of this paragraph and oper-  
9 ated for flood control, navigation, or water sup-  
10 ply purposes and did not produce hydroelectric  
11 power prior to the date of the enactment of this  
12 paragraph,

13 “(B) is part of a project that is licensed by  
14 the Federal Energy Regulatory Commission  
15 and meets all other applicable environmental, li-  
16 censing, and regulatory requirements, and

17 “(C) is operated so that the water surface  
18 elevation at any given location and time that  
19 would have occurred in the absence of the hy-  
20 droelectric project is maintained, subject to any  
21 license requirements imposed under applicable  
22 law that change the water surface elevation for  
23 the purpose of improving environmental quality  
24 of the affected waterway.

1           “(9) ENHANCED GEOTHERMAL SYSTEM.—The  
2 term ‘enhanced geothermal system’ means a system  
3 to extract heat by creating a subsurface fracture  
4 system to which water can be added through injec-  
5 tion wells.”.

6           (2) QUALIFYING ADVANCED ENERGY PROJECT  
7 CREDIT.—Section 48C(c)(1)(A)(i)(IV) of the Inter-  
8 nal Revenue Code of 1986 is amended by inserting“  
9 including through direct air capture or carbon diox-  
10 ide removal” after “emissions”.

11          (d) EFFECTIVE DATE.—The amendments made by  
12 this section shall apply to property placed in service after  
13 December 31, 2020.

14 **SEC. 205. EXTENSION OF PRODUCTION TAX CREDIT FOR**  
15 **SOLAR AND ON-SHORE WIND.**

16          (a) WIND.—Section 45(d)(1) of the Internal Revenue  
17 Code of 1986 is amended by striking “January 1, 2022”  
18 and inserting “January 1, 2031”.

19          (b) SOLAR.—Section 45(d)(4)(A) of such Code is  
20 amended by striking “is placed in service before January  
21 1, 2006” and inserting “the construction of which begins  
22 before January 1, 2031”.

23          (c) APPLICATION OF PHASEOUT PERCENTAGE TO  
24 WIND FACILITIES.—Section 45(b)(5)(D) of such Code is

1 amended by striking “January 1, 2022” and inserting  
2 “January 1, 2031”.

3 (d) EFFECTIVE DATE.—The amendments made by  
4 this section shall apply to facilities the construction of  
5 which begins after December 31, 2020.

6 **SEC. 206. RENEWAL OF QUALIFYING ADVANCED ENERGY**  
7 **PROJECT CREDIT.**

8 (a) IN GENERAL.—Section 48C(d)(2)(A) of the In-  
9 ternal Revenue Code of 1986 is amended by striking “dur-  
10 ing the 2-year period beginning on the date the Secretary  
11 establishes the program under paragraph (1)”.

12 (b) EFFECTIVE DATE.—The amendment made by  
13 this section shall apply to applications received after the  
14 date of the enactment of this Act.

15 **SEC. 207. PERFORMANCE-BASED TAX CREDITS FOR COM-**  
16 **MERCIAL AND RESIDENTIAL BUILDINGS.**

17 (a) IN GENERAL.—Subpart D of part IV of sub-  
18 chapter A of chapter 1 of the Internal Revenue Code of  
19 1986, as amended by this Act, is amended by adding at  
20 the end the following new section:

21 **“SEC. 45V. DEEP RETROFITS AND ZERO-ENERGY COMMER-**  
22 **CIAL AND RESIDENTIAL BUILDINGS.**

23 “(a) ELIGIBILITY FOR TAX CREDIT.—For purposes  
24 of section 38, in the case of an eligible taxpayer who places  
25 an eligible building in service, the deep retrofits and zero-

1 energy commercial and residential buildings credit deter-  
2 mined under this section for a taxable year is the applica-  
3 ble amount with respect to such eligible building.

4 “(b) ELIGIBLE TAXPAYER.—

5 “(1) IN GENERAL.—For purposes of subsection  
6 (a), the term ‘eligible taxpayer’ means, with respect  
7 to an eligible building—

8 “(A) for a residential building, the builder,  
9 and

10 “(B) for a commercial building, the build-  
11 ing owner.

12 “(2) TRANSFER OF CREDIT.—An eligible tax-  
13 payer who is a building owner eligible for a credit  
14 under subparagraph (B) of paragraph (1) may elect  
15 to transfer such credit to the architect, builder, or  
16 contractor of such building.

17 “(3) ELIGIBLE BUILDING.—

18 “(A) IN GENERAL.—For purposes of this  
19 subsection, the term ‘eligible building’ means a  
20 building—

21 “(i) located in the United States,

22 “(ii) which is at least 50 percent occu-  
23 pied in the taxable year in the tax credit  
24 is claimed,

1           “(iii) with respect to which a certifi-  
2           cation has been issued for a qualifying rea-  
3           son pursuant to subsection (c), and

4           “(iv) with respect to which no credit  
5           under this section has been claimed for the  
6           same qualifying reason in a prior taxable  
7           year.

8           “(B) QUALIFYING REASON.—For purposes  
9           of this paragraph, with respect to an eligible  
10          building, the term ‘qualifying reason’ means  
11          such building—

12                 “(i) has undergone a deep energy ret-  
13                 rofit,

14                 “(ii) is a zero-energy-ready building,  
15                 or

16                 “(iii) is a zero-energy building placed  
17                 in service at least 12 months prior to the  
18                 taxable year in which the credit is claimed.

19           “(C) SPECIAL RULE FOR ZERO-ENERGY  
20           AND ZERO-ENERGY-READY BUILDINGS.—A tax-  
21           payer may claim the credit under this section  
22           twice for the same building if—

23                 “(i) the credit is claimed in a taxable  
24                 year for the qualifying reason described in  
25                 subparagraph (B)(ii), and

1                   “(ii) the credit is claimed in a suc-  
2                   ceeding taxable year for the qualifying rea-  
3                   son described in subparagraph (B)(iii).

4                   “(c) CERTIFICATIONS.—

5                   “(1) DEEP ENERGY RETROFIT.—In the case of  
6                   a building with respect to which a deep energy ret-  
7                   rofit was implemented, such retrofit shall meet the  
8                   certification standard of subsection (b)(3)(A) if it  
9                   has been completed and certified as a deep energy  
10                  retrofit by a registered architect or engineer, or by  
11                  another professional authorized by the Secretary of  
12                  Energy by rule.

13                  “(2) ZERO-ENERGY BUILDING.—In the case of  
14                  a building which is a zero-energy building, such  
15                  building shall meet the certification standard of sub-  
16                  section (b)(3)(A) if the building has been zero-en-  
17                  ergy over a span of 12 continuous months with at  
18                  least 50 percent occupancy as verified—

19                         “(A) through certification by the Living  
20                         Buildings Institute Zero Energy Certification  
21                         Program,

22                         “(B) through certification by the LEED  
23                         Zero Energy Certification Program Verification,  
24                         or

1           “(C) by another professional authorized by  
2           the Secretary of Energy by rule.

3           “(3) ZERO-ENERGY-READY BUILDING.—In the  
4           case of a building which is a zero-energy-ready  
5           building, such building shall meet the certification  
6           standard of subsection (b)(3)(A)—

7           “(A) in the case of a commercial building  
8           or high-rise residential building, if the taxpayer  
9           receives a certification from registered engineer,  
10          architect or other professional recognized by  
11          Secretary of Energy stating that such building  
12          meets the definition of a zero-energy-ready  
13          building under subsection (e)(16)(A), and

14          “(B) if such building is a low-rise residen-  
15          tial building—

16                  “(i) if such building has been certified  
17                  as described in subsection (e)(16)(B)(i),

18                  “(ii) if the taxpayer receives a certifi-  
19                  cation from registered engineer, architect  
20                  or other professional recognized by Sec-  
21                  retary of Energy stating that such building  
22                  meets the definition of a zero-energy-ready  
23                  building under subsection (e)(16)(B)(ii).

1       “(d) APPLICABLE AMOUNT.—For purposes of sub-  
2 section (a), the applicable amount shall be determined as  
3 follows:

4           “(1) ZERO-ENERGY-READY BUILDINGS.—For  
5 certified zero-energy-ready buildings—

6           “(A) for a residential building with no  
7 more than four dwelling units, \$5,000 per  
8 dwelling unit,

9           “(B) for a residential building with five or  
10 more dwelling units, \$3,500 per dwelling unit,  
11 and

12           “(C) for a commercial building, \$3 per  
13 square foot of floor area.

14           “(2) ZERO-ENERGY BUILDINGS.—For certified  
15 zero-energy buildings—

16           “(A) for a residential building with no  
17 more than four dwelling units, \$5,000 per  
18 dwelling unit,

19           “(B) for a residential building with five or  
20 more dwelling units, \$3,500 per dwelling unit,  
21 and

22           “(C) for a commercial building that is a  
23 zero-energy building for a period of 12 contin-  
24 uous months starting after the building is at  
25 least 50 percent occupied, \$3 per square foot of

1 floor area, provided that a zero-energy building  
2 may also receive the zero-energy-ready building  
3 incentive if it meets the criteria for this incen-  
4 tive.

5 “(3) DEEP ENERGY RETROFITS.—The following  
6 tax credit amounts shall be awarded to buildings  
7 upon completion of a deep energy retrofit—

8 “(A) for a residential building, \$10,000  
9 per dwelling unit, up to a maximum of  
10 \$1,000,000 per building, and

11 “(B) for a commercial building, \$25 per  
12 square foot of floor area, up to a maximum of  
13 \$2,000,000 per building.

14 “(e) DEFINITIONS.—In this section:

15 “(1) BTU.—The term ‘Btu’ means British  
16 Thermal Unit.

17 “(2) BUILDING ENERGY.—The term ‘building  
18 energy’ means energy consumed at the building site  
19 as measured at the site boundary, which includes  
20 heating, cooling, ventilation, domestic hot water, in-  
21 door and outdoor lighting, plug loads, process en-  
22 ergy, elevators and conveying systems, and  
23 intrabuilding transportation systems.

24 “(3) DEEP ENERGY RETROFIT.—The term  
25 ‘deep energy retrofit’ means a project that uses en-

1 energy efficiency measures and renewable energy re-  
2 sources to reduce the energy use of an existing  
3 building by at least 50 percent on an annual basis  
4 relative to the most recent 12 month period in which  
5 the building was fully occupied prior to the project,  
6 provided that energy efficiency measures must ac-  
7 count for at least 80 percent of the reduction in en-  
8 ergy use.

9 “(4) DELIVERED ENERGY.—The term ‘delivered  
10 energy’ means any type of energy that could be  
11 bought or sold as building energy, including elec-  
12 tricity, steam, hot or chilled water, natural gas,  
13 biogas, landfill gas, coal, coke, propane, petroleum  
14 and its derivatives, residual fuel oil, alcohol-based  
15 fuels, wood, biomass, and any other material con-  
16 sumed as fuel.

17 “(5) EXPORTED ENERGY.—The term ‘exported  
18 energy’ means on-site renewable energy supplied  
19 through the site boundary and used outside the site  
20 boundary.

21 “(6) HIGH-RISE COMMERCIAL BUILDING.—The  
22 term ‘high-rise commercial building’ means a com-  
23 mercial building of four or more above grade stories.

24 “(7) HIGH-RISE RESIDENTIAL BUILDING.—The  
25 term ‘high-rise residential building’ means a multi-

1 family building with four or more above grade sto-  
2 ries.

3 “(8) KWH.—The term ‘kWh’ means Kilowatt  
4 Hour.

5 “(9) LOW-RISE RESIDENTIAL BUILDING.—The  
6 term ‘low-rise residential building’ means a single-  
7 family home or multifamily building with no more  
8 than three above grade stories.

9 “(10) ON-SITE RENEWABLE ENERGY.—The  
10 term ‘on-site renewable energy’ means any renewable  
11 energy collected and generated within the site  
12 boundary that is used for building energy, and the  
13 excess renewable energy exported outside the site  
14 boundary, provided that any renewable energy cer-  
15 tificates associated with the on-site renewable energy  
16 must be retained or retired by the building owner or  
17 lessee to be claimed as on-site renewable energy.

18 “(11) RENEWABLE ENERGY.—The term ‘renew-  
19 able energy’ means energy generated by biomass,  
20 hydro, geothermal, solar, wind, ocean thermal, wave  
21 action, or tidal action resources.

22 “(12) RENEWABLE ENERGY CERTIFICATE.—  
23 The term ‘renewable energy certificate’ means a cer-  
24 tificate or credit that represents and conveys the en-  
25 vironmental, social, or other nonpower qualities of

1 one megawatt hour of renewable energy, and can be  
2 sold separately from the underlying physical elec-  
3 tricity associated with the renewable energy re-  
4 source.

5 “(13) SITE BOUNDARY.—The term ‘site bound-  
6 ary’ means the limits of the building site across  
7 which delivered energy and exported energy are  
8 measured.

9 “(14) SOURCE ENERGY.—The term ‘source en-  
10 ergy’ means building energy plus the energy losses  
11 in thermal combustion in electricity generation re-  
12 sources; and energy losses in transmission and dis-  
13 tribution to the building site.

14 “(15) ZERO-ENERGY BUILDING.—The term  
15 ‘zero-energy building’ means a building for which, on  
16 a source energy basis, the actual annual delivered  
17 energy is less than or equal to the on-site renewable  
18 exported energy, provided that energy purchased  
19 from off-site and renewable energy generated on-site  
20 and then sold off-site shall be valued at 6000 Btu/  
21 kWh.

22 “(16) ZERO-ENERGY-READY BUILDING.—The  
23 term ‘zero-energy-ready building’ means a building  
24 that—

1           “(A) if it is a commercial building or high-  
2           rise residential building—

3                   “(i) is in compliance with Standard  
4                   90.1–2019 published by the American So-  
5                   ciety of Heating, Refrigerating, and Air  
6                   Conditioning Engineers,

7                   “(ii) is in compliance with Appendix  
8                   CA (Solar-Ready Zone) of the 2021 Inter-  
9                   national Energy Conservation Code, and

10                   “(iii) demonstrates that its energy  
11                   consumption is at least 30 percent below  
12                   the maximum permitted under American  
13                   Society of Heating, Refrigerating, and Air  
14                   Conditioning Engineers Standard 90.1–  
15                   2019, as calculated using the methodology  
16                   in Appendix G of such standard, and

17           “(B) if it is a low-rise residential build-  
18           ing—

19                   “(i) has an Energy Rating Index of  
20                   40 or less as calculated using the proce-  
21                   dures in Chapter 3 of the residential sec-  
22                   tion of the 2012 International Energy  
23                   Conservation Code but excluding any re-  
24                   newable energy resources in the calcula-  
25                   tion, provided that certification of compli-

1           ance with the Energy Rating Index re-  
2           quirement shall be made by a registered  
3           architect or engineer by another profes-  
4           sional authorized by the Secretary of En-  
5           ergy by rule,

6           “(ii) is in compliance with Appendix  
7           RA (Solar-Ready Zone) of the 2021 Inter-  
8           national Energy Conservation Code, and

9           “(iii) is certified under—

10           “(I) the Zero Energy Ready  
11           Homes program administered by the  
12           Department of Energy, or

13           “(II) the Passive House speci-  
14           fications of the Passive Institute US  
15           or the International Passive House  
16           Institute.

17           “(f) DENIAL OF DOUBLE BENEFIT.—No credit shall  
18           be allowed under this section for any expense for which  
19           a deduction or credit is allowed under any other provision  
20           of this chapter, including under sections 25C, 25D, and  
21           179D.

22           “(g) SUNSET.—The tax credit under this section  
23           shall terminate—

24           “(1) for zero-energy and zero-energy-ready resi-  
25           dential buildings, one year after the Secretary of En-

1       energy determines by rule that such buildings ac-  
2       counted for at least 20 percent of new residential  
3       buildings in the most recent calendar year,

4               “(2) for zero-energy and zero-energy-ready com-  
5       mercial buildings, one year after the Secretary of  
6       Energy determines by rule that such buildings ac-  
7       counted for at least 20 percent of new commercial  
8       building construction in the most recent calendar  
9       year,

10              “(3) for deep energy retrofits to residential  
11       buildings, one year after the Secretary of Energy de-  
12       termines by rule that at least 10 percent of units at  
13       residential buildings have undergone such retrofits,  
14       and

15              “(4) for deep energy retrofits to commercial  
16       buildings, one year after the Secretary of Energy de-  
17       termines by rule that at least 10 percent of the floor  
18       area of commercial buildings has undergone such  
19       retrofits.

20              “(h) RULES AND REGULATIONS.—Not later than one  
21       year after the date of the enactment of this section, the  
22       Secretary, after consultation with the Secretary of Energy,  
23       shall promulgate such regulations and guidance as are  
24       necessary to implement this section.

1       “(i) REPORT TO CONGRESS.—Not later than two  
2 years after enactment of this section, and each calendar  
3 year thereafter, the Secretary shall report to Congress on  
4 the use of tax credits under this section, broken out by  
5 the applicable amount categories in subsection (d), which  
6 shall include—

7               “(1) the dollar value of tax credits awarded to  
8 date and in the prior calendar year, and

9               “(2) the number of units at residential build-  
10 ings and the number of square feet of floor area in  
11 commercial buildings for which tax credits were  
12 awarded to date and in the prior year calendar  
13 year.”.

14       (b) CONFORMING AMENDMENTS.—

15               (1) Section 38(b) of the Internal Revenue Code  
16 of 1986 is amended—

17                       (A) in paragraph (33), by striking “plus”  
18 at the end,

19                       (B) in paragraph (34), by striking the pe-  
20 riod at the end and inserting, “plus”, and

21                       (C) by adding at the end the following new  
22 paragraph:

23               “(34) the Deep energy retrofits and zero-energy  
24 commercial and residential buildings credit deter-  
25 mined under section 45V(a).”.

1           (2) The table of sections for subpart D of part  
2           IV of subchapter A of chapter 1 of such Code is  
3           amended by adding at the end the following new  
4           item:

          “Sec. 45V. Deep retrofits and zero-energy commercial and residential build-  
          ings.”.

5           (c) EFFECTIVE DATE.—The amendments made by  
6           this section shall apply to property placed in service after  
7           December 31, 2021.

8   **SEC. 208. EXTENSION OF PUBLICLY TRADED PARTNERSHIP**  
9                           **OWNERSHIP STRUCTURE TO RENEWABLE EN-**  
10                           **ERGY PROJECTS.**

11          (a) IN GENERAL.—Section 7704(d)(1)(E) of the In-  
12          ternal Revenue Code of 1986, as amended by this Act,  
13          is amended by adding after clause (v) the following:

14                           “(vi) The generation of electric power  
15                           (including the leasing of tangible personal  
16                           property used for such generation) exclu-  
17                           sively using any resource described in sec-  
18                           tion 45(c)(1) or energy property described  
19                           in section 48 (determined without regard  
20                           to any termination date) or, in the case of  
21                           a facility described in paragraph (3) or (7)  
22                           of section 45(d) (determined without re-  
23                           gard to any placed in service date or date  
24                           by which construction of the facility is re-

1           required to begin), the accepting or proc-  
2           essing of such resource.

3           “(vii) The sale of electric power, ca-  
4           pacity, resource adequacy, demand re-  
5           sponse capabilities, or ancillary services  
6           that is produced or made available from  
7           any equipment or facility (operating as a  
8           single unit or as an aggregation of units)  
9           the principal function of which is to—

10                   “(I) use mechanical, chemical,  
11                   electrochemical, hydroelectric, or ther-  
12                   mal processes to store energy that was  
13                   generated at one time for conversion  
14                   to electricity at a later time, or

15                   “(II) store thermal energy for di-  
16                   rect use for heating or cooling at a  
17                   later time in a manner that avoids the  
18                   need to use electricity at that later  
19                   time.

20           “(viii) The generation, storage, or dis-  
21           tribution of thermal energy exclusively uti-  
22           lizing property described in section  
23           48(c)(3) (determined without regard to  
24           subparagraphs (B) and (D) thereof and

1 without regard to any placed in service  
2 date).

3 “(ix) The generation, storage, or dis-  
4 tribution of thermal energy exclusively  
5 using any resource described in section  
6 45(c)(1) or energy property described in  
7 clause (i) or (iii) of section 48(a)(3)(A).

8 “(x) The use of recoverable waste en-  
9 ergy, as defined in section 371(5) of the  
10 Energy Policy and Conservation Act (42  
11 U.S.C. 6341(5)).”.

12 (b) EFFECTIVE DATE.—The amendment made by  
13 this section shall apply to taxable years beginning after  
14 December 31, 2020.

15 **SEC. 209. MANUFACTURER CREDIT FOR HIGH-EFFICIENCY**  
16 **HEAT PUMPS AND HEAT PUMP WATER HEAT-**  
17 **ERS.**

18 (a) IN GENERAL.—Subpart D of part IV of sub-  
19 chapter A of chapter 1 of the Internal Revenue Code of  
20 1986, as amended by this Act, is amended by adding at  
21 the end the following new section:

22 **“SEC. 45W. MANUFACTURER CREDIT FOR HIGH-EFFI-**  
23 **CENCY HEAT PUMPS AND HEAT PUMP**  
24 **WATER HEATERS.**

25 “(a) ALLOWANCE OF CREDIT.—

1           “(1) IN GENERAL.—For purposes of section 38,  
2           the energy efficient heat pump credit determined  
3           under this section for any taxable year is an amount  
4           equal to the sum of the credit amounts determined  
5           under paragraph (2) for each type of qualified en-  
6           ergy efficient heat pump produced by the taxpayer  
7           during the calendar year ending with or within the  
8           taxable year.

9           “(2) CREDIT AMOUNTS.—The credit amount  
10          determined for any type of qualified energy efficient  
11          appliance is—

12                 “(A) the applicable amount determined  
13                 under subsection (b) with respect to such type,  
14                 multiplied by

15                 “(B) the eligible production for such type  
16                 under subsection (c).

17          “(b) APPLICABLE AMOUNT.—For purposes of sub-  
18          section (a):

19                 “(1) CONSUMER HEAT PUMP WATER HEAT-  
20                 ERS.—The applicable amount is \$600 in the case of  
21                 a consumer heat pump water heater that is manu-  
22                 factured in one of calendar years 2022 through  
23                 2030 and that has a Uniform Energy Factor of 3.3  
24                 or more for electric water heaters and 1.3 or more  
25                 for gas water heaters.

1           “(2) COMMERCIAL HEAT PUMP WATER HEAT-  
2           ERS.—The applicable amount is \$24 per thousand  
3           British Thermal Units of heating capacity in the  
4           case of a commercial heat pump water heater manu-  
5           factured in one of calendar years 2022 through  
6           2030 and that has a Coefficient of Performance of  
7           3.0 or more for electric water heaters and 1.3 or  
8           more for gas water heaters.

9           “(3) CONSUMER UNITARY HEAT PUMPS.—The  
10          applicable amount is \$1000 in the case of a con-  
11          sumer unitary heat pump that—

12                 “(A) is manufactured in calendar years  
13                 2022 through 2030,

14                 “(B) in the case of an electric heat pump  
15                 meets either—

16                         “(i) the most recent requirements of  
17                         the Energy Star Most Efficient Specifica-  
18                         tion promulgated by the United States En-  
19                         vironmental Protection Agency before the  
20                         date of enactment of this section, or

21                         “(ii) the most recent Cold Climate  
22                         Air-Source Heat Pump Specification pro-  
23                         mulgated by Northeast Energy Efficiency  
24                         Partnerships before the date of enactment  
25                         of this section, and

1           “(C) in the case of a gas heat pump, has  
2           an Annual Fuel Utilization Efficiency of 140  
3           percent or more.

4           “(4) COMMERCIAL HEAT PUMPS.—The applica-  
5           ble amount is \$24 per thousand British Thermal  
6           Units of heating capacity measured at a 17 degree  
7           Fahrenheit ambient temperature in the case of a  
8           commercial heat pump that is manufactured in cal-  
9           endar years 2022 through 2030 and that has a Co-  
10          efficient of Performance of 2.3 or more at a 17 de-  
11          gree Fahrenheit ambient temperature for electric  
12          heat pumps, and 1.2 or more at a 17 degree Fahr-  
13          enheit ambient temperature for gas heat pumps.

14          “(5) INDUSTRIAL HEAT PUMPS.—The applica-  
15          ble amount is \$36 per thousand British Thermal  
16          Units of heating capacity for heat pumps with a  
17          heating capacity of 2,400 thousand British Thermal  
18          Units or less and \$18 per thousand British Thermal  
19          Units of heating capacity for heat pumps with a  
20          heating capacity above 2,400 thousand British Ther-  
21          mal Units in the case of an industrial heat pump  
22          that is manufactured and installed in an industrial  
23          facility in calendar years 2022 through 2030 and  
24          that has a Coefficient of Performance of 2.0 or  
25          more.

1       “(c) ELIGIBLE PRODUCTION.—The eligible produc-  
2 tion in a calendar year with respect to each type of energy  
3 efficient heat pump is—

4           “(1) the number of heat pumps of such type  
5 that are produced by the taxpayer in the United  
6 States during such calendar year, less

7           “(2) the average number of heat pumps of such  
8 type that were produced by the taxpayer (or any  
9 predecessor) in the United States during the pre-  
10 ceding 2-calendar year period.

11       “(d) TYPES OF ENERGY EFFICIENT HEAT PUMPS.—  
12 For purposes of this section, the types of energy efficient  
13 heat pumps are—

14           “(1) consumer heat pump water heaters de-  
15 scribed in subsection (b)(1),

16           “(2) commercial heat pump water heaters de-  
17 scribed in subsection (b)(2),

18           “(3) consumer unitary heat pumps described in  
19 subsection (b)(3),

20           “(4) commercial heat pumps described in sub-  
21 section (b)(4), and

22           “(5) industrial heat pumps described in sub-  
23 section (b)(5).

24       “(e) LIMITATIONS.—

1           “(1) AGGREGATE CREDIT AMOUNT ALLOWED.—

2           The aggregate amount of credit allowed under sub-  
3           section (a) with respect to a taxpayer for any tax-  
4           able year shall not exceed \$250,000,000, reduced by  
5           the amount of the credit allowed under subsection  
6           (a) to the taxpayer (or any predecessor) for all prior  
7           taxable years beginning after December 31, 2021.

8           “(2) LIMITATION BASED ON GROSS RE-

9           CEIPTS.—The credit allowed under subsection (a)  
10          with respect to a taxpayer for the taxable year shall  
11          not exceed an amount equal to 4 percent of the aver-  
12          age annual gross receipts of the taxpayer for the 3  
13          taxable years preceding the taxable year in which  
14          the credit is determined.

15          “(3) GROSS RECEIPTS.—For purposes of this  
16          subsection, the rules of paragraphs (2) and (3) of  
17          section 448(c) shall apply.

18          “(f) ADJUSTMENT OF ENERGY EFFICIENCY CRI-  
19          TERIA.—No later than December 31, 2022, and every two  
20          years thereafter, the Secretary, in consultation with the  
21          Secretary of Energy, shall review the efficiency levels in  
22          subsection (b) and revise these levels upward if necessary  
23          to include only the most efficient commercially available  
24          heat pumps of each type, while ensuring that at least three

1 manufacturers are represented in each type across a range  
2 of product heating capacities.

3 “(g) TEST PROCEDURES.—

4 “(1) The Department of Energy shall develop  
5 test procedures to determine Coefficient of Perform-  
6 ance for—

7 “(A) gas commercial heat pump water  
8 heaters,

9 “(B) gas commercial heat pumps, and

10 “(C) industrial heat pumps.

11 “(2) Such test procedures shall build upon the  
12 foundation of relevant current American National  
13 Standard Institute and International Organization  
14 of Standard test procedures.

15 “(h) DEFINITIONS.—For purposes of this section:

16 “(1) QUALIFIED ENERGY EFFICIENT HEAT  
17 PUMP.—The term ‘qualified energy efficient heat  
18 pump’ means—

19 “(A) any consumer heat pump water heat-  
20 er described in subsection (b)(1),

21 “(B) any commercial heat pump water  
22 heater described in subsection (b)(2),

23 “(C) any consumer unitary heat pump de-  
24 scribed in subsection (b)(3),

1           “(D) any commercial heat pump described  
2           in subsection (b)(4), and

3           “(E) any industrial heat pump described in  
4           subsection (b)(5).

5           “(2) CONSUMER HEAT PUMP WATER HEAT-  
6           ER.—The term ‘consumer heat pump water heater’  
7           means a water heater that uses a heat pump to heat  
8           water, has a maximum electric current rating of 24  
9           amperes at an input voltage of 250 volts or less for  
10          electric water heaters, or a gas input of 75,000 Btu  
11          per hour or less for gas water heaters, measured in  
12          accordance with applicable U.S. Department of En-  
13          ergy test procedures.

14          “(3) COMMERCIAL HEAT PUMP WATER HEAT-  
15          ERS.—The term ‘commercial heat pump water heat-  
16          er’ means a water heater that uses a heat pump to  
17          heat water and is not a consumer heat pump water  
18          heater defined in paragraph (2).

19          “(4) CONSUMER UNITARY HEAT PUMP.—The  
20          term ‘consumer unitary heat pump’ means a heat  
21          pump designed to provide space heating and cooling  
22          with a cooling capacity of 65,000 British Thermal  
23          Units per hour or less, measured in accordance with  
24          the applicable Department of Energy test proce-  
25          dures.

1           “(5) COMMERCIAL HEAT PUMP.—The term  
2           ‘commercial heat pump’ means a heat pump de-  
3           signed to provide space heating and cooling with a  
4           cooling capacity of more than 65,000 British Ther-  
5           mal Units per hour, measured in accordance with  
6           the applicable Department of Energy test proce-  
7           dures.

8           “(6) INDUSTRIAL HEAT PUMP.—The term ‘in-  
9           dustrial heat pump’ means a heat pump that up-  
10          grades industrial waste heat to a higher temperature  
11          such that the delivered heat is produced and sup-  
12          plied to the facility more efficiently than conven-  
13          tional heating methods, such as a steam or electric  
14          resistance boiler.

15          “(7) PRODUCED.—The term ‘produced’ in-  
16          cludes manufactured.

17          “(8) UNIFORM ENERGY FACTOR.—The term  
18          ‘Uniform Energy Factor’ is a metric used to meas-  
19          ure the efficiency of consumer water heaters, with  
20          details specified in applicable Department of Energy  
21          test procedures.

22          “(9) COEFFICIENT OF PERFORMANCE.—The  
23          term ‘Coefficient of Performance’ means the ratio of  
24          heat output to energy input, with details specified in  
25          applicable Department of Energy test procedures.

1 For gas commercial heat pump water heaters, until  
2 there is a Department of Energy test procedure,  
3 American National Standards Institute and Amer-  
4 ican Society of Heating, Refrigerating and Air-Con-  
5 ditioning Engineers Standard 118.1 shall be used.

6 For gas commercial heat pumps, until there is a De-  
7 partment of Energy test procedure, American Na-  
8 tional Standards Standard Z21.40.4 shall be used.

9 For industrial heat pumps, until there is a Depart-  
10 ment Energy test procedure, manufacturers may use  
11 their own tests, provided they publicly post the test  
12 conditions and assumptions they used in developing  
13 their stated Coefficient of Performance values.

14 “(i) SPECIAL RULES.—For purposes of this section:

15 “(1) IN GENERAL.—Rules similar to the rules  
16 of subsections (c), (d), and (e) of section 52 shall  
17 apply.

18 “(2) CONTROLLED GROUP.—

19 “(A) IN GENERAL.—All persons treated as  
20 a single employer under subsection (a) or (b) of  
21 section 52 or subsection (m) or (o) of section  
22 414 shall be treated as a single producer.

23 “(B) INCLUSION OF FOREIGN CORPORA-  
24 TIONS.—For purposes of subparagraph (A), in  
25 applying subsections (a) and (b) of section 52

1 to this section, section 1563 shall be applied  
2 without regard to subsection (b)(2)(C) thereof.

3 “(3) VERIFICATION.—No amount shall be al-  
4 lowed as a credit under subsection (a) with respect  
5 to which the taxpayer has not submitted such infor-  
6 mation or certification as the Secretary, in consulta-  
7 tion with the Secretary of Energy, determines nec-  
8 essary.

9 “(4) PRODUCTION IN UNITED STATES.—The re-  
10 quirement for production in the United States in  
11 subsection (c) shall not take effect until January 1,  
12 2025.”.

13 (b) CLERICAL AMENDMENT.—The table of sections  
14 for subpart D of part IV of subchapter A of chapter 1,  
15 as amended by this Act, is further amended by adding  
16 after the item relating to section 45V the following new  
17 item:

“Sec. 45W. Manufacturer credit for high-efficiency heat pumps and heat pump  
water heaters.”.

18 **SEC. 210. OTHER AUTHORIZATIONS OF APPROPRIATIONS.**

19 (a) AMENDMENT TO AMERICA COMPETES ACT.—  
20 Section 5012(o)(2) of the America COMPETES Act (42  
21 U.S.C. 16538(o)(2)) is amended by striking subpara-  
22 graphs (B) through (E) and inserting the following:

23 “(B) \$569,000,000 for fiscal year 2022;

24 “(C) \$713,000,000 for fiscal year 2023;

1                   “(D) \$856,000,000 for fiscal year 2024;

2                   and

3                   “(E) \$1,000,000,000 for fiscal year

4                   2025.”.

5           (b) REGIONAL INNOVATION MODELS.—There are au-  
6 thorized to be appropriated to the Secretary for purposes  
7 of developing regional innovation models—

8                   (1) \$100,000,000 for fiscal year 2022;

9                   (2) \$200,000,000 for fiscal year 2023;

10                  (3) \$300,000,000 for fiscal year 2024; and

11                  (4) \$500,000,000 for fiscal year 2025.

12           (c) GRID MODERNIZATION.—There are authorized to  
13 be appropriated to the Secretary for purposes of research,  
14 development, demonstration, analysis, technology valida-  
15 tion, market transformation, and technical assistance to  
16 support grid modernization—

17                  (1) \$238,000,000 for fiscal year 2022;

18                  (2) \$375,000,000 for fiscal year 2023;

19                  (3) \$513,000,000 for fiscal year 2024; and

20                  (4) \$650,000,000 for fiscal year 2025.

21           (d) ADVANCED LAND-BASED AND OFFSHORE WIND  
22 POWER.—There are authorized to be appropriated to the  
23 Secretary for the purposes of research, development, dem-  
24 onstration, analysis, technology validation, market trans-

1 formation, and technical assistance to support advanced  
2 land-based and offshore wind power—

3 (1) \$178,000,000 for fiscal year 2022;

4 (2) \$252,000,000 for fiscal year 2023;

5 (3) \$326,000,000 for fiscal year 2024; and

6 (4) \$400,000,000 for fiscal year 2025.

7 (e) **ADVANCED SOLAR POWER.**—There are author-  
8 ized to be appropriated to the Secretary for the purposes  
9 of research, development, demonstration, analysis, tech-  
10 nology validation, market transformation, and technical  
11 assistance to support advanced solar power—

12 (1) \$360,000,000 for fiscal year 2022;

13 (2) \$440,000,000 for fiscal year 2023;

14 (3) \$520,000,000 for fiscal year 2024; and

15 (4) \$600,000,000 for fiscal year 2025.

16 (f) **MECHANICAL, CHEMICAL, AND THERMAL STOR-**  
17 **AGE TECHNOLOGY.**—There are authorized to be appro-  
18 priated to the Secretary for the purposes of research, de-  
19 velopment, demonstration, analysis, technology validation,  
20 market transformation, and technical assistance to sup-  
21 port mechanical, chemical, and thermal storage tech-  
22 nology—

23 (1) \$150,000,000 for fiscal year 2022;

24 (2) \$150,000,000 for fiscal year 2023;

25 (3) \$150,000,000 for fiscal year 2024; and

1           (4) \$150,000,000 for fiscal year 2025.

2           (g) BUILDINGS.—There are authorized to be appro-  
3 priated to the Secretary for the purposes of research, de-  
4 velopment, demonstration, analysis, technology validation,  
5 market transformation, and technical assistance to sup-  
6 port technologies that improve the energy efficiency of  
7 building equipment, the building envelope, building con-  
8 trols, and that improve information sharing between the  
9 building and the grid, which technologies may include en-  
10 ergy efficiency, demand response, and electrification tech-  
11 nologies in residential, commercial, and industrial build-  
12 ings—

13           (1) \$381,000,000 for fiscal year 2022;

14           (2) \$478,000,000 for fiscal year 2023;

15           (3) \$574,000,000 for fiscal year 2024; and

16           (4) \$670,000,000 for fiscal year 2025.

17           (h) INDUSTRY.—There are authorized to be appro-  
18 priated to the Secretary for the purposes of research, de-  
19 velopment, demonstration, analysis, technology validation,  
20 market transformation, and technical assistance to sup-  
21 port technologies to reduce emissions in industrial and  
22 manufacturing processes, including such technologies re-  
23 lating to energy efficiency and electrification—

24           (1) \$381,000,000 for fiscal year 2022;

25           (2) \$478,000,000 for fiscal year 2023;

1 (3) \$574,000,000 for fiscal year 2024; and

2 (4) \$840,000,000 for fiscal year 2025.

3 (i) ENHANCED GEOTHERMAL TECHNOLOGIES.—

4 There are authorized to the Secretary for the purposes  
5 of research, development, and demonstration of enhanced  
6 geothermal technologies an increase in the amount from  
7 fiscal year 2019 appropriations by \$100,000,000 for each  
8 year until fiscal year 2026, of which—

9 (1) \$70,000,000 is authorized for the Secretary  
10 to use each year to establish a supercritical en-  
11 hanced geothermal system demonstration program;  
12 and

13 (2) \$30,000,000 is authorized for the Secretary  
14 to use each year in collaboration with the National  
15 Laboratories for supercritical enhanced geothermal  
16 systems research and development.

17 **TITLE III—EXISTING AND AD-**  
18 **VANCED NUCLEAR POWER**  
19 **PLANTS**

20 **SEC. 301. ZERO-EMISSIONS CREDIT PROGRAM.**

21 (a) ESTABLISHMENT.—Not later than 2 years after  
22 the date of enactment of this section, the Secretary shall  
23 establish a program to be known as the “Zero-Emissions  
24 Credit Program”.

1 (b) ISSUANCE OF CREDITS.—Under the Zero-Emiss-  
2 sions Credit Program the Secretary shall, by not later  
3 than March 1 of each calendar year, issue zero-emissions  
4 credits to each owner or operator of a qualified nuclear  
5 power plant in the quantity that is equal to the number  
6 of megawatt-hours of electricity sold by such owner or op-  
7 erator to an organized power market in the prior year.

8 (c) PAYMENT FOR CREDITS.—

9 (1) IN GENERAL.—Except as provided in para-  
10 graphs (2), (3), and (4), under the Zero-Emissions  
11 Credit Program the Secretary shall pay an owner or  
12 operator of a qualified nuclear power plant \$13.25  
13 for each zero-emissions credit such owner or oper-  
14 ator submits to the Secretary.

15 (2) ADJUSTMENTS FOR INFLATION.—Each year  
16 the Secretary shall adjust the amount paid for each  
17 zero-emissions credit to account for the effects of in-  
18 flation based on the Consumer Price Index for All  
19 Urban Consumers (as published by the Bureau of  
20 Labor Statistics of the Department of Labor).

21 (3) REDUCTION IN VALUE OF CREDIT.—If the  
22 price for the sale of electricity to an organized power  
23 market increases in a calendar year such that pay-  
24 ments for zero-emissions credits under paragraph  
25 (1) are no longer needed to prevent the retirement

1 of a qualified nuclear power plant in the subsequent  
2 year, the Secretary shall, after the application of any  
3 adjustment under paragraph (2), reduce the amount  
4 to be paid for each zero-emissions credit to the  
5 owner or operator of such qualified nuclear power  
6 plant to account for such change in price.

7 (4) OFFSET FOR VALUE OF CLEAN ELEC-  
8 TRICITY CREDITS.—If the owner or operator of a  
9 qualified nuclear power plant is issued any clean  
10 electricity credits under section 611 of the Public  
11 Utility Regulatory Policies Act of 1978 (as added by  
12 section 402 of this Act) in a calendar year in which  
13 such owner or operator is issued zero-emissions cred-  
14 its, the Secretary shall reduce the amount paid for  
15 such zero-emissions credits by the value of such  
16 clean electricity credits.

17 (d) TERMINATION DATE.—The Zero-Emissions  
18 Credit Program shall terminate on the date that is 5 years  
19 after the program effective date.

20 (e) RULEMAKING.—Not later than 1 year after the  
21 date of enactment of this section, the Secretary shall issue  
22 a final rule to carry out this section.

23 (f) DEFINITIONS.—In this section:

24 (1) CLEAN ELECTRICITY CREDIT.—The term  
25 “clean electricity credit” has the meaning given such

1 term in section 611(g) of the Public Utility Regu-  
2 latory Policies Act of 1978 (as added by section 402  
3 of this Act).

4 (2) ORGANIZED POWER MARKET.—The term  
5 “organized power market” means any market that is  
6 controlled by a Regional Transmission Organization  
7 or an Independent System Operator, as such terms  
8 are defined in section 3 of the Federal Power Act  
9 (16 U.S.C. 796).

10 (3) PROGRAM EFFECTIVE DATE.—The term  
11 “program effective date” has the meaning given  
12 such term in section 611(g) of the Public Utility  
13 Regulatory Policies Act of 1978 (as added by section  
14 402 of this Act).

15 (4) QUALIFIED NUCLEAR POWER PLANT.—

16 (A) IN GENERAL.—The term “qualified  
17 nuclear power plant” means any nuclear power  
18 plant the Secretary determines, by not later  
19 than 2 years after the date of enactment of this  
20 Act and based on an application submitted by  
21 such plant to the Secretary, is not financially  
22 viable or will otherwise be required to retire if  
23 it does not receive zero-emissions credits under  
24 the Zero-Emissions Credit Program.

1 (B) EXCLUSION.—The term “qualified nu-  
2 clear power plant” does not include a nuclear  
3 power plant with respect to which a tax credit  
4 under section 48 of the Internal Revenue Code  
5 of 1986 is claimed in the taxable year prior to  
6 the taxable year in which the Secretary makes  
7 the determination under subparagraph (A).

8 (5) ZERO-EMISSIONS CREDIT.—The term “zero-  
9 emissions credit” means a credit issued by the Sec-  
10 retary under the Zero-Emissions Credit Program  
11 that represents 1 megawatt-hour of electricity sold  
12 by the owner or operator of a qualified nuclear  
13 power plant to an organized power market.

14 **SEC. 302. INVESTMENT TAX CREDIT FOR NUCLEAR ENERGY**  
15 **PROPERTY.**

16 (a) IN GENERAL.—Section 48(a)(3)(A) of the Inter-  
17 nal Revenue Code of 1986, as amended by section 204,  
18 is amended by striking “or” at the end of clause (xi), by  
19 adding “or” at the end of clause (xii), and by adding at  
20 the end the following new clause:

21 “(xiii) qualified nuclear energy prop-  
22 erty.”.

23 (b) ELIGIBLE FOR 30-PERCENT CREDIT.—Section  
24 48(a)(2)(A)(i) of such Code is amended by striking “and”

1 in subclause (IV) and by adding at the end the following  
2 new subclause:

3 “(VI) energy property described  
4 in paragraph (3)(A)(xiii), but only  
5 with respect to property placed in  
6 service before January 1, 2024, and”.

7 (c) QUALIFIED NUCLEAR ENERGY PROPERTY.—Sec-  
8 tion 48(c) of such Code, as amended by section 204, is  
9 amended by adding at the end the following new para-  
10 graph:

11 “(10) QUALIFIED NUCLEAR ENERGY PROP-  
12 ERTY.—

13 “(A) IN GENERAL.—The term ‘qualified  
14 nuclear energy property’ means, with respect to  
15 a qualifying nuclear power plant—

16 “(i) amounts paid or incurred for the  
17 refueling of such power plant, and

18 “(ii) any expenditure described in sec-  
19 tion 263(a).

20 “(B) QUALIFYING NUCLEAR POWER  
21 PLANT.—The term ‘qualifying nuclear power  
22 plant’ means a nuclear power plant which—

23 “(i) submits an application for license  
24 renewal to the Nuclear Regulatory Com-  
25 mission in accordance with part 54 of title

1           10, Code of Federal Regulations, before  
2           January 1, 2026, or

3           “(ii) certifies to the Secretary (at such  
4           time and in such form and in such manner  
5           as the Secretary may prescribe) that such  
6           plant will submit an application for license  
7           renewal to the Nuclear Regulatory Com-  
8           mission in accordance with part 54 of title  
9           10, Code of Federal Regulations, before  
10          January 1, 2026.

11          “(C) SPECIAL RULES.—

12           “(i) BASIS.—For purposes of sub-  
13           section (a), the cumulative amounts paid  
14           or incurred by the taxpayer during the tax-  
15           able year with respect to a qualifying nu-  
16           clear power plant which are properly  
17           chargeable to capital account shall be  
18           treated as the basis of the qualified nuclear  
19           energy property placed in service for that  
20           taxable year.

21           “(ii) PLACED IN SERVICE.—For pur-  
22           poses of subsection (a), qualified nuclear  
23           energy property shall be treated as having  
24           been placed in service on the last day of  
25           the taxable year in which the taxpayer

1           pays or incurs such amounts described in  
2           clause (i).

3           “(iii) RECAPTURE.—The Secretary  
4           shall provide by regulations for the recap-  
5           ture of any credit allowable under sub-  
6           section (a) to any qualifying nuclear power  
7           plant which makes a certification pursuant  
8           to subparagraph (B) but does not file an  
9           application of license renewal to the Nu-  
10          clear Regulatory Commission in accordance  
11          with part 54 of title 10, Code of Federal  
12          Regulations, before January 1, 2026.”.

13          (d) PHASEOUT OF 30-PERCENT CREDIT RATE FOR  
14          NUCLEAR ENERGY PROPERTY.—Section 48(a) of such  
15          Code is amended by adding at the end the following new  
16          paragraph:

17                 “(8) PHASEOUT FOR QUALIFIED NUCLEAR EN-  
18                 ERGY PROPERTY.—In the case of qualified nuclear  
19                 energy property, the energy percentage determined  
20                 under paragraph (2) shall be equal to—

21                         “(A) in the case of any property placed in  
22                         service after December 31, 2023, and before  
23                         January 1, 2025, 26 percent, and

1           “(B) in the case of any property placed in  
2           service after December 31, 2022, and before  
3           January 1, 2026, 22 percent.”.

4           (e) COORDINATION WITH CREDIT FOR PRODUCTION  
5 FROM ADVANCED NUCLEAR POWER FACILITIES.—Sec-  
6 tion 48(a)(3) of such Code is amended by inserting “or  
7 section 45J” after “section 45”.

8           (f) TRANSFER OF CREDIT BY CERTAIN PUBLIC EN-  
9 TITIES.—

10           (1) IN GENERAL.—Section 48 of such Code is  
11 amended by adding at the end the following new  
12 subsection:

13           “(e) SPECIAL RULE FOR QUALIFIED NUCLEAR EN-  
14 ERGY PROPERTY.—

15           “(1) IN GENERAL.—In the case of any qualified  
16 nuclear energy property, if, with respect to a credit  
17 under subsection (a) for any taxable year—

18           “(A) the taxpayer is a qualified public enti-  
19 ty, and

20           “(B) such qualified public entity elects the  
21 application of this subsection for such taxable  
22 year with respect to such credit (or any portion  
23 thereof), the eligible project partner specified in  
24 such election shall be treated as the taxpayer

1 for purposes of this title with respect to such  
2 credit (or such portion thereof).

3 “(2) DEFINITIONS.—For purposes of this sub-  
4 section:

5 “(A) QUALIFIED PUBLIC ENTITY.—The  
6 term ‘qualified public entity’ means—

7 “(i) a Federal, State, or local govern-  
8 ment entity, or any political subdivision,  
9 agency, or instrumentality thereof,

10 “(ii) a mutual or cooperative electric  
11 company described in section 501(e)(12) or  
12 section 1381(a)(2), or

13 “(iii) a not-for-profit electric utility  
14 which received a loan or loan guarantee  
15 under the Rural Electrification Act of  
16 1936.

17 “(B) ELIGIBLE PROJECT PARTNER.—The  
18 term ‘eligible project partner’ means—

19 “(i) any person responsible for oper-  
20 ating, maintaining, or repairing the quali-  
21 fying nuclear power plant to which the  
22 credit under subsection (a) relates,

23 “(ii) any person who participates in  
24 the provision of the nuclear steam supply  
25 system to the qualifying nuclear power

1 plant to which the credit under subsection  
2 (a) relates,

3 “(iii) any person who participates in  
4 the provision of nuclear fuel to the quali-  
5 fying nuclear power plant to which the  
6 credit under subsection (a) relates, or

7 “(iv) any person who has an owner-  
8 ship interest in such facility.

9 “(3) SPECIAL RULES.—

10 “(A) APPLICATION TO PARTNERSHIPS.—In  
11 the case of a credit under subsection (a) which  
12 is determined with respect to qualified nuclear  
13 energy property at the partnership level—

14 “(i) for purposes of paragraph (1)(A),  
15 a qualified public entity shall be treated as  
16 the taxpayer with respect to such entity’s  
17 distributive share of such credit, and

18 “(ii) the term ‘eligible project partner’  
19 shall include any partner of the partner-  
20 ship.

21 “(B) TAXABLE YEAR IN WHICH CREDIT  
22 TAKEN INTO ACCOUNT.—In the case of any  
23 credit (or portion thereof) with respect to which  
24 an election is made under subsection (e), such  
25 credit shall be taken into account in the first

1 taxable year of the eligible project partner end-  
2 ing with, or after, the qualified public entity's  
3 taxable year with respect to which the credit  
4 was determined.

5 “(C) TREATMENT OF TRANSFER UNDER  
6 PRIVATE USE RULES.—For purposes of section  
7 141(b)(1), any benefit derived by an eligible  
8 project partner in connection with an election  
9 under this subsection shall not be taken into ac-  
10 count as a private business use.”.

11 (2) SPECIAL RULE FOR PROCEEDS OF TRANS-  
12 FERS FOR MUTUAL OR COOPERATIVE ELECTRIC  
13 COMPANIES.—Section 501(c)(12) of such Code is  
14 amended by adding at the end the following new  
15 subparagraph:

16 “(K) In the case of a mutual or coopera-  
17 tive electric company described in this para-  
18 graph or an organization described in section  
19 1381(a)(2), income received or accrued in con-  
20 nection with an election under section 48(e)  
21 shall be treated as an amount collected from  
22 members for the sole purpose of meeting losses  
23 and expenses.”.

24 (g) CONFORMING AMENDMENT.—Section  
25 48(a)(2)(A) of such Code is amended by striking “para-

1 graphs (6) and (7)” and inserting “paragraphs (6), (7),  
2 and (8)”.

3 (h) **EFFECTIVE DATE.**—The amendments made by  
4 this section shall apply to periods after December 31,  
5 2020, in taxable years ending after such date, under rules  
6 similar to the rules of section 48(m) of the Internal Rev-  
7 enue Code of 1986 (as in effect on the day before the en-  
8 actment of the Revenue Reconciliation Act of 1990).

9 **SEC. 303. EXPANDING FEDERAL CLEAN ELECTRICITY PUR-**  
10 **CHASING REQUIREMENTS.**

11 (a) **FEDERAL PURCHASE REQUIREMENT.**—Section  
12 203 of the Energy Policy Act of 2005 (42 U.S.C. 15852)  
13 is amended—

14 (1) in subsection (a), by striking “, the fol-  
15 lowing amounts shall be renewable energy:” and in-  
16 serting “, such amount shall be made up of the fol-  
17 lowing:”;

18 (2) in subsection (a)(1), by inserting “shall be  
19 renewable energy” after “2009”;

20 (3) in subsection (a)(2), by inserting “shall be  
21 renewable energy” after “2012”;

22 (4) in subsection (a)(3), by striking “7.5 per-  
23 cent in fiscal year 2013 and each fiscal year there-  
24 after.” and inserting “7.5 percent in fiscal years  
25 2013 through 2020 shall be renewable energy.”;

1           (5) in subsection (a), by adding at the end the  
2 following:

3           “(4) Not less than 35 percent in fiscal year  
4 2021 and each year thereafter shall be clean elec-  
5 tricity.”;

6           (6) in subsection (b), by adding at the end the  
7 following:

8           “(3) CLEAN ELECTRICITY.—The term ‘clean  
9 electricity’ means—

10                   “(A) renewable energy;

11                   “(B) electric energy generated by a nuclear  
12 power plant; and

13                   “(C) electric energy generated by a power  
14 plant equipped with carbon capture utilization  
15 and storage technology, from which at least 90  
16 percent of the carbon dioxide output of such  
17 plant is captured and utilized, or stored in a  
18 manner that prevents emission to the atmos-  
19 phere.”;

20           (7) in subsection (c), by striking “renewable en-  
21 ergy” and inserting “clean electricity” in each place  
22 it occurs;

23           (8) by redesignating subsection (d) as sub-  
24 section (e); and

1           (9) by inserting after subsection (c) the fol-  
2           lowing:

3           “(d) **POWER PURCHASE AGREEMENT.**—For the pur-  
4           poses of this section, the Secretary may enter into a power  
5           purchase agreement for any amount of the electricity gen-  
6           erated by a nuclear power plant for the duration of the  
7           operational life of such nuclear power plant if such nuclear  
8           power plant supplies electricity for purposes of national  
9           security or mission-critical activities.”.

10          (b) **LONG-TERM NUCLEAR POWER PURCHASE**  
11 **AGREEMENT PILOT PROGRAM.**—Subtitle B of title VI of  
12 the Energy Policy Act of 2005 is amended by adding at  
13 the end the following:

14 **“SEC. 639A. LONG-TERM NUCLEAR POWER PURCHASE**  
15 **AGREEMENT PILOT PROGRAM.**

16          “(a) **ESTABLISHMENT.**—The Secretary shall estab-  
17          lish and carry out a pilot program to enter into long-term  
18          power purchase agreements for electricity generated by  
19          commercial nuclear power plants.

20          “(b) **REQUIREMENTS.**—In carrying out the pilot pro-  
21          gram established under subsection (a), the Secretary  
22          shall—

23                  “(1) consult and coordinate with the heads of  
24                  other Federal agencies that may benefit from pur-

1 chasing nuclear power for a period of longer than 10  
2 years, including—

3 “(A) the Secretary of Defense;

4 “(B) the Administrator of General Serv-  
5 ices; and

6 “(C) the Secretary of Homeland Security;  
7 and

8 “(2) not later than 10 years after the date of  
9 enactment of this section, enter into at least 1 power  
10 purchase agreement with the owner or operator of a  
11 commercial nuclear power plant for up to 30 years.

12 “(c) PRIORITY.—In carrying out the pilot program  
13 established under subsection (a), the Secretary shall  
14 prioritize entering into a power purchase agreement with  
15 the owner or operator of a commercial nuclear power  
16 plant—

17 “(1) to which a license is issued under section  
18 103 of the Atomic Energy Act of 1954 (42 U.S.C.  
19 2133) after January 1, 2021;

20 “(2) that uses first-of-a-kind or early deploy-  
21 ment nuclear technology; and

22 “(3) that can provide reliable and resilient  
23 power—

24 “(A) to high-value assets for national secu-  
25 rity purposes; or

1           “(B) for other purposes that the Secretary  
2           determines are in the national interest, includ-  
3           ing in remote off-grid scenarios or grid-con-  
4           nected scenarios for which such commercial nu-  
5           clear power plant can provide capabilities com-  
6           monly known as ‘islanding power capabilities’.

7           “(d) EFFECT ON RATES.—A power purchase agree-  
8           ment entered into under this section may be at a rate that  
9           is higher than the average market rate if the power pur-  
10          chase agreement fulfills a purpose described in subsection  
11          (c).”.

12          (c) TABLE OF CONTENTS.—The table of contents of  
13          the Energy Policy Act of 2005 (Public Law 109–58; 119  
14          Stat. 594) is amended by inserting after the item relating  
15          to section 639 the following:

          “Sec. 639A. Long-term nuclear power purchase agreement pilot program.”.

16          (d) AUTHORIZATION OF LONG-TERM POWER PUR-  
17          CHASE AGREEMENTS.—Section 501(b)(1) of title 40,  
18          United States Code, is amended by striking subparagraph  
19          (B) and inserting the following:

20                   “(B) PUBLIC UTILITY CONTRACTS.—

21                           “(i) TERM.—

22                                   “(I) IN GENERAL.—A contract  
23                                   under this paragraph to purchase  
24                                   electricity service from a public utility

1                   may be for a period of not more than  
2                   40 years.

3                   “(II) OTHER PUBLIC UTILITY  
4                   SERVICES.—A contract under this  
5                   paragraph for a public utility service  
6                   other than a service described in sub-  
7                   clause (I) may be for a period of not  
8                   more than 10 years.

9                   “(ii) COSTS.—The cost of a contract  
10                  under this paragraph for any fiscal year  
11                  may only be paid from the appropriations  
12                  for that fiscal year.”.

13 **SEC. 304. MODERNIZING THE NUCLEAR REGULATORY COM-**  
14 **MISSION.**

15                  (a) REDUCING THE ADMINISTRATIVE BURDEN OF  
16 LICENSING ADVANCED NUCLEAR REACTORS.—

17                  (1) REPORT.—Not later than 90 days after the  
18                  date of enactment of this section, the Commission  
19                  shall submit to the Committee on Energy and Com-  
20                  merce of the House of Representatives and the Com-  
21                  mittee on Energy and Natural Resources of the Sen-  
22                  ate a report that recommends how to improve the  
23                  processes, procedures, and, if appropriate, regula-  
24                  tions of the Commission with respect to licensing,  
25                  certification, and approval of advanced nuclear reac-

1 tors pursuant to the Atomic Energy Act of 1954 (42  
2 U.S.C. 2011 et seq.).

3 (2) REQUIRED RECOMMENDATIONS.—The re-  
4 port submitted under paragraph (1) shall include  
5 recommendations to—

6 (A) improve, accelerate, and reduce the  
7 cost of all Commission actions with respect to  
8 licensing, certification, and approval of ad-  
9 vanced nuclear reactors pursuant to the Atomic  
10 Energy Act of 1954 (42 U.S.C. 2011 et seq.),  
11 including actions to improve compliance with  
12 section 102(2)(C) of the National Environ-  
13 mental Policy Act of 1969 (42 U.S.C.  
14 4332(2)(C));

15 (B) emphasize risk-informed and perform-  
16 ance-based regulatory approaches; and

17 (C) enable the Commission to finalize re-  
18 view of an application for certification of a de-  
19 sign of an advanced nuclear reactor pursuant to  
20 the Atomic Energy Act of 1954 (42 U.S.C.  
21 2011 et seq.) by not later than 2 years after the  
22 date on which such application is filed.

23 (3) DEFINITIONS.—In this subsection:

24 (A) ADVANCED NUCLEAR REACTOR.—The  
25 term “advanced nuclear reactor” has the mean-

1           ing given such term in section 951(b)(1) of the  
2           Energy Policy Act of 2005 (42 U.S.C.  
3           16271(b)(1)).

4                   (B) COMMISSION.—The term “Commis-  
5           sion” means the Nuclear Regulatory Commis-  
6           sion.

7           (b) STUDY ON ELIMINATION OF FOREIGN LICENSING  
8           RESTRICTIONS.—Not later than 18 months after the date  
9           of enactment of this section, the Comptroller General, in  
10          consultation with the Secretary, shall submit to Congress  
11          a report containing the results of a study on the feasibility  
12          and implications of repealing restrictions related to foreign  
13          ownership and control under sections 103 d. and 104 d.  
14          of the Atomic Energy Act of 1954 (42 U.S.C. 2133(d)  
15          and 2134(d)).

16          (c) STUDY ON THE IMPACT OF THE ELIMINATION OF  
17          MANDATORY HEARINGS FOR UNCONTESTED LICENSING  
18          APPLICATIONS.—Not later than 18 months after the date  
19          of enactment of this section, the Comptroller General, in  
20          consultation with the Secretary, shall submit to Congress  
21          a report containing the results of a study on the estimated  
22          effect of eliminating the requirement under section 189  
23          of the Atomic Energy Act of 1954 (42 U.S.C. 2239) to  
24          hold a hearing for uncontested applications.

1 (d) DEFINITIONS.—Section 11 of the Atomic Energy  
2 Act of 1954 (42 U.S.C. 2014) is amended by adding at  
3 the end the following:

4 “jj. EARLY SITE PERMIT.—In sections 182, 189, and  
5 194, the term ‘early site permit’ has the meaning given  
6 such term in section 52.1 of title 10, Code of Federal Reg-  
7 ulations (as in effect on the date of enactment of this sub-  
8 section).”.

9 (e) APPLICATION REVIEWS FOR NUCLEAR ENERGY  
10 PROJECTS.—

11 (1) LICENSE APPLICATIONS.—Section 182 of  
12 the Atomic Energy Act of 1954 (42 U.S.C. 2232) is  
13 amended by adding at the end the following:

14 “e. STREAMLINING APPLICATION REVIEW.—With re-  
15 spect to an application for a construction permit, oper-  
16 ating license, or combined construction permit and oper-  
17 ating license, the Commission shall—

18 “(1) undertake an expedited environmental re-  
19 view process and issue any draft environmental im-  
20 pact statements (as required pursuant to section  
21 102(2)(C) the National Environmental Policy Act of  
22 1969 (42 U.S.C. 4332(2)(C))) for the application  
23 not later than 12 months after the date on which  
24 the application is accepted for docketing; and

1           “(2) complete the technical review process of  
2           the application, issue any safety evaluation reports,  
3           and issue any final environmental impact statements  
4           (as required pursuant to section 102(2)(C) the Na-  
5           tional Environmental Policy Act of 1969 (42 U.S.C.  
6           4332(2)(C))) for the application not later than 24  
7           months after the date on which the application is ac-  
8           cepted for docketing.

9           “f. PRODUCTION OR UTILIZATION FACILITY LO-  
10          CATED AT AN EXISTING SITE.—In reviewing an applica-  
11          tion for an early site permit, construction permit, oper-  
12          ating license, or combined construction permit and oper-  
13          ating license for a proposed production facility or utiliza-  
14          tion facility that is to be located at the site of a production  
15          facility or utilization facility for which an early site permit,  
16          construction permit, operating license, or combined con-  
17          struction permit and operating license has been issued, the  
18          Commission shall, to the extent practicable, use informa-  
19          tion that was part of the determination to issue the license  
20          for such production facility or utilization facility.”.

21                 (2) USE OF EARLY SITE PERMIT ENVIRON-  
22          MENTAL IMPACT STATEMENT.—Chapter 16 of the  
23          Atomic Energy Act of 1954 (42 U.S.C. 2231 et  
24          seq.) is amended by adding at the end the following:

1 **“SEC. 194. USE OF EARLY SITE PERMIT ENVIRONMENTAL**  
2 **IMPACT STATEMENT.**

3 “a. SUPPLEMENTAL ENVIRONMENTAL IMPACT  
4 STATEMENT.—Any environmental impact statement re-  
5 quired pursuant to section 102(2)(C) the National Envi-  
6 ronmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)) for  
7 purposes of issuing a construction permit, operating li-  
8 cense, or combined construction permit and operating li-  
9 cense for a production facility or utilization facility, for  
10 which an early site permit has been issued, shall be pre-  
11 pared as a supplement to the environmental impact state-  
12 ment prepared for such early site permit.

13 “b. INCORPORATION BY REFERENCE.—A supple-  
14 mental environmental impact statement prepared under  
15 subsection a. shall—

16 “(1) incorporate by reference the analysis, find-  
17 ings, and conclusions from the environmental impact  
18 statement prepared for the applicable early site per-  
19 mit; and

20 “(2) include additional discussion, analysis,  
21 findings, and conclusions on matters resolved in the  
22 early site permit proceeding only to the extent nec-  
23 essary to address information that—

24 “(A) is new; and

25 “(B) would materially change the prior  
26 findings or conclusions.”.

1 (f) HEARINGS.—

2 (1) IN GENERAL.—Section 189 of the Atomic  
3 Energy Act of 1954 (42 U.S.C. 2239) is amended—

4 (A) in subsection a. (1) (B)—

5 (i) by striking clause (iv); and

6 (ii) by redesignating clause (v) as  
7 clause (iv); and

8 (B) by adding at the end the following:

9 “c. HEARING PROCEDURES.—All hearings under this  
10 section shall be conducted using informal adjudicatory  
11 procedures, unless the Commission determines that formal  
12 adjudicatory procedures are necessary—

13 “(1) to develop a sufficient record; or

14 “(2) to achieve fairness.

15 “d. HEARING ON EARLY SITE PERMIT, CONSTRU-  
16 TION PERMIT, OPERATING LICENSE, AND COMBINED  
17 CONSTRUCTION PERMIT AND OPERATING LICENSE.—

18 “(1) IN GENERAL.—Notwithstanding any out-  
19 standing request for a hearing, the Commission shall  
20 issue and make immediately effective any early site  
21 permit, construction permit, operating license, or  
22 combined construction permit and operating license  
23 for a production facility or utilization facility upon  
24 the Commission’s finding that the application there-  
25 for satisfies the requirements of this Act.

1           “(2) APPROPRIATE ACTION.—Following comple-  
2           tion of any required hearing, the Commission shall  
3           take any appropriate action with respect to the early  
4           site permit, construction permit, operating license,  
5           or combined construction permit and operating li-  
6           cense to the extent necessary to account for the deci-  
7           sion in any such required hearing.”.

8           (2) LICENSING OF URANIUM ENRICHMENT FA-  
9           CILITIES.—Section 193(b) of the Atomic Energy Act  
10          of 1954 (42 U.S.C. 2243(b)) is amended—

11                   (A) by amending paragraph (1) to read as  
12                   follows:

13                   “(1) IN GENERAL.—Upon a request for a hear-  
14                   ing on the licensing of construction and operation of  
15                   a uranium enrichment facility under sections 53 and  
16                   63, the Commission shall conduct a single adjudica-  
17                   tory hearing.”; and

18                   (B) in paragraph (2), by striking “Such  
19                   hearing” and inserting “If a hearing is held  
20                   under paragraph (1), the hearing”.

21          (g) TECHNICAL AMENDMENT.—Section 103 d. of the  
22          Atomic Energy Act of 1954 (42 U.S.C. 2133d.) is amend-  
23          ed by striking “or any any” and inserting “or any”.

24          (h) AUTHORIZATION OF APPROPRIATIONS.—

1           (1) IN GENERAL.—There are authorized to be  
2           appropriated to carry out subsections (a), (b), and  
3           (c) \$20,000,000 for each of fiscal years 2021  
4           through 2031, to remain available until expended.

5           (2) OFF-FEE APPROPRIATION.—Any funds ap-  
6           propriated to carry out subsections (a), (b), and (c)  
7           may not be recovered by the Commission through  
8           the collection of user fees from existing licensees.

9   **SEC. 305. DEMONSTRATION AND EARLY DEPLOYMENT OF**  
10                                   **ADVANCED NUCLEAR REACTORS.**

11           (a) DEMONSTRATION PROJECTS.—Section 959A(c)  
12           of the Energy Policy Act of 2005 (42 U.S.C. 16279a(c))  
13           is amended—

14                   (1) by redesignating paragraphs (1) through  
15                   (10) as paragraphs (2) through (11), respectively;

16                   (2) by inserting after “the Secretary shall—”  
17                   the following:

18                           “(1) not later than December 31, 2025, estab-  
19                           lish a program to enter into agreements to carry out  
20                           no fewer than 5 demonstration projects pursuant to  
21                           subsection (b)(1) to demonstrate the suitability of  
22                           advanced nuclear reactors for commercial applica-  
23                           tions;”;

1           (3) in paragraph (10)(A), as redesignated by  
2 paragraph (1) of this subsection, by striking “para-  
3 graph (8)” and inserting “paragraph (9)”; and

4           (4) in paragraph (11), as redesignated by para-  
5 graph (1) of this subsection, by striking “paragraph  
6 (8)” and inserting “paragraph (9)” and by striking  
7 “paragraph (9)” and inserting “paragraph (10)”.

8           (b) RESEARCH AND DEVELOPMENT GOALS.—Section  
9 959A of such Act (42 U.S.C. 16279a(c)) is amended—

10           (1) by redesignating subsection (f) as sub-  
11 section (g); and

12           (2) by inserting after subsection (e) the fol-  
13 lowing:

14           “(f) RESEARCH GOALS.—

15           “(1) IN GENERAL.—The Secretary shall estab-  
16 lish and annually update goals for the research to  
17 support the demonstration of advanced reactors  
18 under subsection (c) and the deployment of subse-  
19 quent advanced reactors.

20           “(2) COORDINATION.—In developing and up-  
21 dating the goals, the Secretary shall coordinate with  
22 members of private industry.

23           “(3) REQUIREMENTS.—In developing the goals,  
24 the Secretary shall ensure that—

25           “(A) research activities are focused on—

1                   “(i) key areas of nuclear research, de-  
2                   velopment, and deployment that range  
3                   from basic research on advanced nuclear  
4                   reactor generation to full-design develop-  
5                   ment, safety evaluation, and licensing;

6                   “(ii) resolving materials challenges re-  
7                   lating to radiation damage or corrosive  
8                   coolants; and

9                   “(iii) qualification of advanced nuclear  
10                  fuel;

11                  “(B) infrastructure, such as a versatile re-  
12                  actor-based fast neutron source, which is re-  
13                  quired to be established in section 955(c)(1), or  
14                  a molten salt testing facility to aid in research,  
15                  is constructed; and

16                  “(C) advanced manufacturing and con-  
17                  struction techniques and materials are analyzed  
18                  to identify strategies to reduce the commer-  
19                  cialization cost of advanced nuclear reactors.”.

20                  (c) AUTHORIZATION OF APPROPRIATIONS.—There  
21                  are authorized to be appropriated to the Secretary  
22                  \$1,500,000,000 for each of fiscal years 2022 through  
23                  2023 for each of the following:

24                   (1) Gateway for Accelerated Innovation in Nu-  
25                  clear vouchers.

1           (2) Advanced nuclear technology development  
2 funding opportunity announcements.

3           (3) Advanced small modular nuclear reactor re-  
4 search and development.

5           (4) The advanced reactor demonstration pro-  
6 gram.

7           (5) The Nuclear Reactor Innovation Center.

8           (d) AUTHORIZATION OF APPROPRIATION.—Section  
9 2001(c) of division Z of the Consolidated Appropriations  
10 Act, 2021 (Public Law 116–260) is amended to read as  
11 follows:

12           “(c) AUTHORIZATION OF APPROPRIATIONS.—There  
13 are authorized to be appropriated to the Secretary to carry  
14 out research, development, demonstration, and transpor-  
15 tation activities in this section \$350,000,000 for each of  
16 fiscal years 2022 through 2031.”.

17 **SEC. 306. AUTHORIZATION OF APPROPRIATIONS FOR LOAN**  
18 **GUARANTEES FOR ADVANCED NUCLEAR FA-**  
19 **CILITIES.**

20           Section 1704 of the Energy Policy Act of 2005 (42  
21 U.S.C. 16514) is amended by adding at the end the fol-  
22 lowing:

23           “(c) ADVANCED NUCLEAR ENERGY FACILITIES.—  
24 There are authorized to be appropriated to the Secretary  
25 to make guarantees under section 1703(b)(4)

1 \$10,000,000,000 for each of fiscal years 2022 through  
2 2031, to remain available until expended.”.

3 **SEC. 307. EXPANDING THE PRODUCTION TAX CREDIT FOR**  
4 **NUCLEAR POWER.**

5 (a) IN GENERAL.—Section 45J of the Internal Rev-  
6 enue Code of 1986 is amended—

7 (1) in subsection (a)(1), by striking “1.8 cents”  
8 and inserting “2.7 cents”; and

9 (2) in subsection (b)(5)(B)(i), by striking  
10 “6,000 megawatts” and inserting “15,000  
11 megawatts”.

12 (b) EFFECTIVE DATE.—The amendments made by  
13 this section shall apply to taxable years beginning after  
14 December 31, 2020.

15 **TITLE IV—CLEAN ELECTRICITY**  
16 **STANDARD**

17 **SEC. 401. CERTIFICATION OF COST-EFFECTIVE MARKET**  
18 **PENETRATION OF CLEAN ELECTRICITY**  
19 **TECHNOLOGIES.**

20 (a) IN GENERAL.—Title VI of the Public Utility Reg-  
21 ulatory Policies Act of 1978 (16 U.S.C. 2601 et seq.) is  
22 amended by adding at the end the following:

1 **“SEC. 610. FEDERAL DECARBONIZATION AND INNOVATION**  
2 **ASSESSMENT PROGRAM.**

3 “(a) IN GENERAL.—Not later than 2 years after the  
4 date of enactment of this section, the Secretary, after con-  
5 sultation with the Administrator of the Environmental  
6 Protection Agency, shall establish a program, to be known  
7 as the ‘Federal Decarbonization and Innovation Assess-  
8 ment Program’, to annually review and monitor progress  
9 towards—

10 “(1) an 80 percent reduction in the amount of  
11 carbon dioxide emitted by electricity generators, rel-  
12 ative to the amount of such emissions on the date  
13 of enactment of this section, by 2050; and

14 “(2) cost-effective market penetration of eligible  
15 technologies, as determined by the Secretary under  
16 subsection (b).

17 “(b) COST-EFFECTIVE MARKET PENETRATION.—  
18 The Secretary shall determine that eligible technologies  
19 have achieved cost-effective market penetration if—

20 “(1) at least 3 gigawatts of new electricity gen-  
21 erating capacity using any type of eligible technology  
22 has come into commercial operation since the date  
23 of enactment of this section, provided that—

24 “(A) less than 50 percent of the capital  
25 costs of such new electricity generating capacity  
26 has been subsidized with Federal funds; and

1           “(B) at least 1 gigawatt of such capacity  
2           is coal-fired electricity generating capacity that  
3           is equipped with carbon capture utilization and  
4           storage technology, from which at least 90 per-  
5           cent of the carbon dioxide output is captured  
6           and utilized or stored in a manner that pre-  
7           vents emission to the atmosphere; and

8           “(2) at least one type of eligible technology—

9                   “(A) has similar operating characteristics  
10                  as fossil-fueled electricity generation technology,  
11                  such as dispatchability upon demand; and

12                   “(B) based on data provided by the En-  
13                  ergy Information Administration, has a total  
14                  cost of electricity generation that is not more  
15                  than 10 percent higher than the average total  
16                  cost of electricity generation from fossil-fueled  
17                  electricity generators that were constructed not  
18                  earlier than 5 years prior to the date of enact-  
19                  ment of this section.

20           “(c) CERTIFICATION OF COST-EFFECTIVE MARKET  
21           PENETRATION.—Upon making the determination de-  
22           scribed under subsection (b), but no earlier than the date  
23           that is 5 years after the date of enactment of this section,  
24           the Secretary shall certify that cost-effective market pene-  
25           tration of eligible technology has occurred.

1 “(d) DEFINITIONS.—In this section:

2 “(1) ADVANCED DISPATCHABLE RENEWABLE  
3 ENERGY SYSTEM.—The term ‘advanced dispatchable  
4 renewable energy system’ means an integrated sys-  
5 tem of energy storage technology deployed with wind  
6 or solar electricity generation technology for which  
7 the Secretary has determined that the availability of  
8 such integrated system to be dispatched to support  
9 ongoing electric grid reliability is similar to that of  
10 fossil-fueled electricity generation technology.

11 “(2) ADVANCED NUCLEAR POWER GENERATION  
12 TECHNOLOGY.—The term ‘advanced nuclear power  
13 generation technology’ has the meaning given the  
14 term ‘advanced nuclear reactor’ in section 951(b) of  
15 the Energy Policy Act of 2005 (42 U.S.C. 16271).

16 “(3) ELIGIBLE TECHNOLOGY.—The term ‘eligi-  
17 ble technology’ means any of the following:

18 “(A) Advanced nuclear power generation  
19 technology.

20 “(B) Advanced dispatchable renewable en-  
21 ergy system.

22 “(C) Fossil-fueled electricity generation  
23 technology equipped with carbon capture utili-  
24 zation and storage technology, from which at  
25 least 90 percent of the carbon dioxide output of

1 the fossil-fueled electricity generation tech-  
 2 nology is—

3 “(i) captured and utilized; or

4 “(ii) stored in a manner that prevents  
 5 emission to the atmosphere.”.

6 (b) CONFORMING AMENDMENT.—Section 1(b) of the  
 7 Public Utility Regulatory Policies Act of 1978 is amended  
 8 by adding after the item relating to section 608 the fol-  
 9 lowing:

“Sec. 609. Rural and remote communities electrification grants.

“Sec. 610. Federal decarbonization and innovation assessment program.”.

10 **SEC. 402. FEDERAL CLEAN ELECTRICITY STANDARD.**

11 (a) PURPA AMENDMENTS.—

12 (1) IN GENERAL.—Title VI of the Public Utility  
 13 Regulatory Policies Act of 1978 (16 U.S.C. 2601 et  
 14 seq.) is further amended by adding after section 610  
 15 (as added by this Act) the following:

16 **“SEC. 611. CLEAN ELECTRICITY STANDARD.**

17 “(a) CLEAN ELECTRICITY CREDIT PROGRAM.—Not  
 18 later than 180 days after the program trigger date and  
 19 in accordance with this section, the Secretary shall estab-  
 20 lish a program—

21 “(1) to reduce the amount of carbon dioxide  
 22 that is emitted by electricity generators; and

23 “(2) under which clean electricity credits are  
 24 issued, tracked, and surrendered.

1 “(b) ISSUANCE OF CLEAN ELECTRICITY CREDITS.—

2 “(1) IN GENERAL.—For each calendar year, be-  
3 ginning on the program effective date, the Secretary  
4 shall issue clean electricity credits to each qualifying  
5 electricity generator in the amount determined under  
6 paragraph (2).

7 “(2) DETERMINATION OF CREDITS ISSUED.—  
8 Except as provided in paragraph (3), the number of  
9 clean electricity credits issued under paragraph (1)  
10 shall be the number that is equal to—

11 “(A) the number of megawatt-hours of  
12 electricity sold by the qualifying electricity gen-  
13 erator; multiplied by

14 “(B) the number that is equal to—

15 “(i) 1.0; less

16 “(ii) the number that is equal to—

17 “(I) the annual carbon intensity  
18 of the qualifying electricity generator;  
19 divided by

20 “(II) 0.82.

21 “(3) USE OF DYNAMIC CREDITING METHODO-  
22 OLOGY.—If a dynamic crediting methodology is ap-  
23 proved under section 612(c), the Secretary shall use  
24 such methodology to determine the number of clean  
25 electricity credits to issue under this subsection.

1 “(c) SURRENDER OF CREDITS.—

2 “(1) IN GENERAL.—For each compliance period  
3 each retail electricity supplier shall, except as pro-  
4 vided in paragraph (2) and by not later than 6  
5 months after the date on which the compliance pe-  
6 riod ends, surrender the number of clean electricity  
7 credits determined under paragraph (3).

8 “(2) PAYMENT.—For each clean electricity  
9 credit required to be surrendered under paragraph  
10 (1) that is not so surrendered, a retail electricity  
11 supplier shall pay an amount that is equal to the al-  
12 ternative compliance price determined under para-  
13 graph (7).

14 “(3) NUMBER OF CREDITS.—

15 “(A) IN GENERAL.—As determined by the  
16 Secretary, the number of clean electricity cred-  
17 its required to be surrendered under paragraph  
18 (1) by each retail electricity supplier shall be  
19 equal to—

20 “(i) the percentage determined under  
21 subparagraph (B); multiplied by

22 “(ii) the number of megawatt-hours of  
23 electricity sold at retail by the retail elec-  
24 tricity supplier during the applicable com-  
25 pliance period.

1 “(B) DETERMINATION OF PERCENTAGE.—

2 “(i) REDUCTION REQUIREMENT.—The  
3 Secretary shall determine the percentage to  
4 be applied in subparagraph (A)(i) for each  
5 compliance period that will result in an 80  
6 percent reduction in the amount of carbon  
7 dioxide emitted by electricity generators,  
8 relative to the amount of such emissions on  
9 the date of enactment of this section, by  
10 2050.

11 “(ii) LINEAR CHANGES.—The Sec-  
12 retary shall determine the percentage for  
13 each compliance period under clause (i)  
14 with the goal of achieving linear reductions  
15 in the amount of carbon dioxide emitted by  
16 electricity generators in each successive  
17 compliance period.

18 “(C) FIRST COMPLIANCE PERIOD.—The  
19 percentage determined under subparagraph (B)  
20 for the first compliance period shall be the  
21 greater of—

22 “(i) the percentage obtained by divid-  
23 ing—

24 “(I) the total number of clean  
25 electricity credits that would be issued

1 under subsection (b)(2) for the year  
2 in which this section is enacted; by

3 “(II) the total number of mega-  
4 watt-hours of electricity sold by retail  
5 electricity suppliers in the year in  
6 which this section is enacted; and

7 “(ii) the percentage obtained by divid-  
8 ing—

9 “(I) the total number of clean  
10 electricity credits projected to be  
11 issued under paragraph (4)(B) for  
12 2030; by

13 “(II) the total number of mega-  
14 watt-hours projected to be sold by re-  
15 tail electricity suppliers in 2030.

16 “(4) PROJECTIONS.—

17 “(A) EARLY PROJECTION FOR FIRST COM-  
18 PLIANCE PERIOD.—Not later than the date that  
19 is 2 years after the date of enactment of this  
20 section, the Secretary shall publish a projection  
21 of the percentage to be used for purposes of  
22 paragraph (3)(A)(i) for the first compliance pe-  
23 riod, which such projection shall be made based  
24 on the number of megawatt-hours of electricity  
25 sold by qualifying electricity generators during

1 the period of five years that precedes the date  
2 of the projection and the associated carbon di-  
3 oxide emissions.

4 “(B) 2030 PROJECTION.—By not later  
5 than 2026, the Secretary shall publish a projec-  
6 tion of the number of clean electricity credits  
7 that would be issued to qualifying electricity  
8 generators in 2030.

9 “(5) SINGLE USE OF CREDITS.—Each clean  
10 electricity credit issued under subsection (b) may  
11 only be surrendered once for purposes of complying  
12 with the requirements of paragraph (1).

13 “(6) BANKING OF CLEAN ELECTRICITY CRED-  
14 ITS.—A clean electricity credit issued under sub-  
15 section (b) may be surrendered for the compliance  
16 period in which the clean electricity credit is issued  
17 or in any subsequent compliance period.

18 “(7) ALTERNATIVE COMPLIANCE PRICE.—

19 “(A) INITIAL AMOUNT.—The alternative  
20 compliance price for the first compliance period  
21 shall be \$30 per applicable clean electricity  
22 credit.

23 “(B) ANNUAL ADJUSTMENTS TO ALTER-  
24 NATIVE COMPLIANCE PRICE.—

1           “(i) IN GENERAL.—Beginning after  
2           the first compliance period, the Secretary  
3           shall increase the amount of the alternative  
4           compliance price from the amount for the  
5           prior compliance period by 5 percent.

6           “(ii) OTHER ADJUSTMENTS.—The  
7           Secretary may adjust the alternative com-  
8           pliance price to account for inflation, as  
9           the Secretary may determine necessary.

10          “(d) CIVIL PENALTIES.—

11                 “(1) IN GENERAL.—Subject to paragraph (2), a  
12                 retail electricity supplier that fails to meet the re-  
13                 quirements of paragraph (1) or (2) of subsection (c)  
14                 shall be subject to a civil penalty in an amount equal  
15                 to—

16                         “(A) the number of megawatt-hours of  
17                         electricity sold by the retail electricity supplier  
18                         for which such retail electricity supplier fails to  
19                         surrender a clean electricity credit or make an  
20                         alternative compliance payment as required  
21                         under subsection (c); multiplied by

22                                 “(B) 200 percent of the value of the appli-  
23                                 cable alternative compliance price.

24                 “(2) PROCEDURE FOR ASSESSING PENALTY.—

25                 The Secretary shall assess a civil penalty under this

1 subsection in accordance with the procedures for as-  
2 ssuming a penalty under section 333(d) of the Energy  
3 Policy and Conservation Act (42 U.S.C. 6303(d)).

4 “(e) SAVINGS PROVISION.—Nothing in this section  
5 affects the authority of a State, or a political subdivision  
6 of a State, to adopt or enforce any law relating to—

7 “(1) clean electricity or renewable energy;

8 “(2) carbon dioxide emissions; or

9 “(3) the regulation of a retail electricity sup-  
10 plier.

11 “(f) REGULATIONS.—Not later than 1 year after the  
12 date of enactment of this section, the Secretary shall issue  
13 regulations to implement this section.

14 “(g) DEFINITIONS.—In this section:

15 “(1) CARBON INTENSITY.—The term ‘carbon  
16 intensity’ means, as determined by the Secretary in  
17 consultation with the Administrator of the Environ-  
18 mental Protection Agency and with respect to a  
19 qualifying electricity generator, the amount (in met-  
20 ric tons per megawatt-hour) obtained by dividing—

21 “(A) the annual carbon dioxide emissions  
22 of the qualifying electricity generator, excluding  
23 any carbon dioxide that is captured and utilized  
24 or stored in a manner that prevents emission to  
25 the atmosphere; by

1           “(B) the annual quantity of electricity gen-  
2           erated by the qualifying electricity generator.

3           “(2) CLEAN ELECTRICITY CREDIT.—The term  
4           ‘clean electricity credit’ means a credit issued under  
5           subsection (b).

6           “(3) CLEAN ELECTRICITY STANDARD.—The  
7           term ‘clean electricity standard’ means the require-  
8           ments of section 611.

9           “(4) COMPLIANCE PERIOD.—The term ‘compli-  
10          ance period’ means the 3-year period that begins on  
11          the program effective date and each 3-year period  
12          thereafter until 2050.

13          “(5) QUALIFYING ELECTRICITY GENERATOR.—  
14          The term ‘qualifying electricity generator’ means  
15          any electricity generator that has an annual carbon  
16          intensity of less than 0.82 metric tons per mega-  
17          watt-hour.

18          “(6) RETAIL ELECTRICITY SUPPLIER.—The  
19          term ‘retail electricity supplier’ means an entity in  
20          the United States that sold not fewer than 20 mega-  
21          watt-hours of electricity to electricity consumers for  
22          purposes other than resale during the preceding cal-  
23          endar year.

24          “(7) PROGRAM TRIGGER DATE.—The term ‘pro-  
25          gram trigger date’ means January 1 of the first cal-

1       endar year beginning after the date on which the  
2       Secretary certifies that cost-effective market pene-  
3       tration of eligible technologies has occurred under  
4       section 610(c).

5               “(8) PROGRAM EFFECTIVE DATE.—The term  
6       ‘program effective date’ means the earlier of—

7                       “(A) the date that is 2 years after the pro-  
8       gram trigger date; and

9                       “(B) January 1 of the first calendar year  
10       that begins after the date that is 10 years after  
11       the date of enactment of this section.

12       **“SEC. 612. IDENTIFICATION, REVIEW, AND APPROVAL OF**  
13                       **DYNAMIC CREDITING METHODOLOGIES.**

14               “(a) IDENTIFICATION OF DYNAMIC CREDITING  
15       METHODOLOGIES.—

16                       “(1) IN GENERAL.—Not later than 2 years  
17       after the date of enactment of this section, the Sec-  
18       retary, in consultation with the Administrator of the  
19       Environmental Protection Agency, shall identify a  
20       dynamic crediting methodology for calculating the  
21       amount of carbon dioxide emissions that are avoided  
22       or displaced on an hourly basis by increased elec-  
23       tricity generation from qualifying electricity genera-  
24       tors.

1           “(2) CONSIDERATION OF REGIONAL DIF-  
2           FERENCES.—Any dynamic crediting methodology  
3           identified under paragraph (1) may account for dif-  
4           ferences between—

5                   “(A) regions in which there is a Regional  
6           Transmission Organization or an Independent  
7           System Operator; and

8                   “(B) regions in which there are no such  
9           entities.

10          “(b) COMMISSION REVIEW OF DYNAMIC CREDITING  
11          METHODOLOGIES.—

12                   “(1) IN GENERAL.—The Secretary shall provide  
13           any dynamic crediting methodology identified under  
14           subsection (a) to the Commission for review.

15                   “(2) TECHNICAL CONFERENCE.—Not later  
16           than 120 days after the Secretary provides a dy-  
17           namic crediting methodology to the Commission  
18           under paragraph (1), the Commission shall hold a  
19           technical conference in partnership with State regu-  
20           latory authorities to evaluate such methodology.

21                   “(3) REPORT.—Not later than 180 days after  
22           the Commission holds a technical conference under  
23           paragraph (2), and after providing an opportunity  
24           for public comment, the Commission shall provide to  
25           the Secretary a report on the technical conference

1 that includes Commission recommendations con-  
2 cerning the use of the dynamic crediting method-  
3 ology.

4 “(c) APPROVAL.—Not later than 180 days following  
5 receipt of the report provided under subsection (b)(3), the  
6 Secretary, in consultation with the Administrator of the  
7 Environmental Protection Agency, shall approve use of the  
8 dynamic crediting methodology that is the subject of such  
9 report if the Secretary determines that such use would—

10 “(1) significantly enhance confidence that the  
11 program established under 611(a)(1) will help  
12 achieve an 80 percent reduction in the amount of  
13 carbon dioxide emitted by electricity generators, rel-  
14 ative to the amount of such emissions on the date  
15 of enactment of this section, by 2050; or

16 “(2) significantly reduce the costs of achieving  
17 such reduction.

18 “(d) USE OF DYNAMIC CREDITING METHODOLO-  
19 GIES.—

20 “(1) ADJUSTMENT TO AMOUNT OF CREDITS.—

21 If the Secretary approves a dynamic crediting meth-  
22 odology under subsection (c), the Secretary shall use  
23 such dynamic crediting methodology to determine  
24 the number of clean electricity credits to be issued  
25 to a qualifying electricity generator to account for

1 the amount of carbon dioxide emissions that are  
2 avoided or displaced on an hourly basis by increased  
3 electricity generation from such qualifying electricity  
4 generator.

5 “(2) DEADLINE.—

6 “(A) IN GENERAL.—Except as provided in  
7 subparagraph (B), the Secretary shall use a dy-  
8 namic crediting methodology approved under  
9 subsection (c) beginning in the later of—

10 “(i) the first full calendar year begin-  
11 ning after the date on which such approval  
12 occurs; and

13 “(ii) the first calendar year of the  
14 first compliance period.

15 “(B) EXCEPTION.—The Secretary may  
16 delay use of an approved dynamic crediting  
17 methodology by 1 year if the Secretary finds  
18 that additional time is needed for the Secretary  
19 or the Commission to take actions necessary to  
20 carry out subsection (e).

21 “(e) IMPLEMENTATION.—

22 “(1) IN GENERAL.—The Secretary may, by  
23 rule, require that Regional Transmission Organiza-  
24 tions, Independent System Operators, other bal-  
25 ancing authorities, and other appropriate entities

1 provide the Secretary with the information necessary  
2 for the Secretary to use a dynamic crediting method-  
3 ology approved under subsection (c).

4 “(2) TARIFFS.—At the request of the Sec-  
5 retary, or upon its own initiative, the Commission  
6 shall consider whether changes to any tariffs on file  
7 pursuant to section 205 of the Federal Power Act  
8 (16 U.S.C. 824d) are necessary to implement the re-  
9 quirements of any rule issued by the Secretary  
10 under paragraph (1).

11 “(f) REGIONAL TRANSMISSION ORGANIZATION;  
12 INDEPENDENT SYSTEM OPERATOR.—The terms ‘Re-  
13 gional Transmission Organization’ and ‘Independent Sys-  
14 tem Operator’ have the meanings given such terms in sec-  
15 tion 3 of the Federal Power Act (16 U.S.C. 796).

16 “(g) DEFINITIONS.—In this section, the terms ‘clean  
17 electricity credit’, ‘compliance period’, and ‘qualifying elec-  
18 tricity generator’ have the meanings given such terms in  
19 section 611.”.

20 (2) CONFORMING AMENDMENT.—Section 1(b)  
21 of the Public Utility Regulatory Policies Act of 1978  
22 is further amended by adding after the item related  
23 to section 610 (as added by this Act) the following:

“Sec. 611. Clean electricity standard.

“Sec. 612. Identification, review, and approval of dynamic crediting methodolo-  
gies.”.

1 (b) AMENDMENTS TO THE CLEAN AIR ACT.—Section  
2 111(a)(4) of the Clean Air Act (42 U.S.C. 7411(a)(4))  
3 is amended—

4 (1) by striking “The term” and inserting “(A)  
5 The term”; and

6 (2) by adding at the end the following:

7 “(B) Until the end of the first compliance  
8 period of the clean electricity standard (as such  
9 terms are defined in section 611(h) of Public  
10 Utility Regulatory Policies Act of 1978), the  
11 term ‘modification’, notwithstanding subpara-  
12 graph (A), does not include a physical or oper-  
13 ational change at an electricity generating unit  
14 that is designed to reduce the amount of carbon  
15 dioxide emitted per megawatt hour at electricity  
16 utility generating units, provided that such  
17 change—

18 “(i) does not cause the violation of a  
19 national ambient air quality standard in an  
20 air quality control region in which an envi-  
21 ronmental justice community (as defined  
22 by the Administrator) exists; and

23 “(ii) does not result in—

24 “(I) an increase in the maximum  
25 hourly emissions rate of any air pol-

1                   lutant subject to a national ambient  
2                   air quality standard under section 109  
3                   that is achievable by such unit; and

4                   “(II) both a significant emissions  
5                   increase and a significant net emis-  
6                   sions increase in annual actual emis-  
7                   sions of such pollutant from such  
8                   unit.”.

9   **SEC. 403. REGIONAL CLEAN ELECTRICITY PLANNING MOD-**  
10                   **ELS.**

11           (a) DEVELOPMENT OF PLANNING MODELS AND  
12 DATA.—Not later than 2 years after the date of enact-  
13 ment this Act, the Secretary shall make available one or  
14 more regional electricity planning models and standard-  
15 ized data sets, including potential renewable energy hourly  
16 production profiles at all potential locations for renewable  
17 energy deployment, that States can use to develop plans  
18 for portfolios of clean electricity resources that are capable  
19 of achieving, at least cost, the goal described under section  
20 610(a)(1) of the Public Utility Regulatory Policies Act of  
21 1978, as added by section 402 of this Act, consistent with  
22 the need to maintain reliability.

23           (b) DEVELOPMENT PROCESS.—In making planning  
24 models and data available under subsection (a), the Sec-  
25 retary shall—

1           (1) solicit planning models and standardized,  
2 data sets from the national laboratories and univer-  
3 sities;

4           (2) hold jointly with the Commission a technical  
5 conference on planning models and standardized  
6 data sets, including hourly profiles of renewable en-  
7 ergy production at potential deployment locations,  
8 and consider the input from such conference in  
9 choosing planning models and data sets to make  
10 available; and

11           (3) update the planning models and data sets  
12 made available from time to time in response to new  
13 information.

14       (c) USE OF MODELS BY STATES.—The Secretary  
15 shall encourage States to use the models and data sets  
16 to—

17           (1) plan collaboratively with other States in the  
18 same North American Electric Reliability Corpora-  
19 tion reliability region or organized electricity market  
20 on least-cost and reliable compliance with the clean  
21 electricity standard (as such term is defined in sec-  
22 tion 611(h) of the Public Utility Regulatory Policies  
23 Act of 1978); and

24           (2) adopt, and from time to time update, multi-  
25 State clean electricity resource deployment goals

1 that promote least-cost deployment consistent with  
2 maintaining electric reliability.

3 **SEC. 404. STAND-BY EMISSION PERFORMANCE STANDARDS.**

4 (a) ANNUAL REVIEW OF EMISSIONS.—Not later than  
5 February 1 of the first calendar year beginning after the  
6 date of enactment of this section, and each February 1  
7 thereafter, the Secretary, in consultation with the Admin-  
8 istrator of the Environmental Protection Agency, shall  
9 publish a determination of the annual average level of car-  
10 bon dioxide emissions from electricity generators for the  
11 prior 3 calendar years.

12 (b) ENFORCEABILITY.—An emission limitation for  
13 carbon dioxide emissions from electric utility steam gener-  
14 ating units established under title I of the Clean Air Act  
15 (42 U.S.C. 7401 et seq.) may be enforced by a State or  
16 by the Administrator of the Environmental Protection  
17 Agency—

18 (1) before the program trigger date, only if—

19 (A) the Secretary, not earlier than 5 years  
20 after the date of enactment of this Act, deter-  
21 mines under subsection (a) that the 5-year an-  
22 nual average level of carbon dioxide emissions  
23 from electric utility steam generating units ex-  
24 ceeded the annual average level of such emis-

1           sions for the preceding 5-year period by at least  
2           6 percent; or

3           (B) the Secretary finds that significantly  
4           less than the full amount of funding authorized  
5           for programs under this Act has been appro-  
6           priated, resulting in substantial limitation to or  
7           delay of the technology advancement elements  
8           of this Act; or

9           (2) after the end of a compliance period, only  
10          if the clean electricity standard is not enforced for  
11          the compliance period.

12          (c) CLEAN AIR ACT AUTHORITIES.—Except as pro-  
13          vided in this section, neither a State nor the Administrator  
14          of the Environmental Protection Agency may enforce any  
15          emission limitation established under title I of the Clean  
16          Air Act (42 U.S.C. 7401 et seq.) for carbon dioxide emis-  
17          sions from electric utility steam generating units.

18          (d) DEFINITIONS.—In this section:

19                 (1) CLEAN ELECTRICITY STANDARD; PROGRAM  
20                 TRIGGER DATE; COMPLIANCE PERIOD.—The terms  
21                 “clean electricity standard”, “program trigger date”,  
22                 and “compliance period” have the meanings given  
23                 such terms in section 611(h) of the Public Utility  
24                 Regulatory Policies Act of 1978, as added by section  
25                 402 of this Act.

1           (2) ELECTRIC UTILITY STEAM GENERATING  
2           UNIT.—The term “electric utility steam generating  
3           unit” has the meaning given such term in section  
4           112(a) of the Clean Air Act (42 U.S.C. 7412(a)).

## 5           **TITLE V—MISCELLANEOUS**

### 6           **SEC. 501. ADDITIONAL REQUIREMENTS.**

7           (a) WAGES.—Notwithstanding any other provision of  
8           law and in a manner consistent with other provisions in  
9           this Act, all laborers and mechanics employed by contrac-  
10          tors or subcontractors in the performance of construction,  
11          alteration, or repair work funded directly by or assisted  
12          in whole or in part by and through the Federal Govern-  
13          ment pursuant to this Act shall be paid wages at rates  
14          not less than those prevailing on projects of a character  
15          similar in the locality as determined by the Secretary of  
16          Labor in accordance with subchapter IV of chapter 31 of  
17          title 40, United States Code. With respect to the labor  
18          standards specified in this section, the Secretary of Labor  
19          shall have the authority and functions set forth in Reorga-  
20          nization Plan Numbered 14 of 1950 (64 Stat. 1267; 5  
21          U.S.C. App.) and section 3145 of title 40, United States  
22          Code.

23          (b) EXCEPTION.—Subsection (a) shall not apply to  
24          the use of a grant awarded under section 203.

1 **SEC. 502. UTILIZATION OF QUALIFIED APPRENTICES BY**  
2 **CONSTRUCTION CONTRACTORS.**

3 (a) **IN GENERAL.**—All contractors and subcontractors engaged in the performance of construction, alteration, or repair work on a covered project shall, subject to subsection (b), ensure that not less than 15 percent of the total labor hours of such work be performed by 8 qualified apprentices.

9 (b) **APPRENTICE-TO-JOURNEYWORKER RATIO.**—The 10 requirement under subsection (a) shall be subject to any 11 applicable requirements for apprentice-to-journeyworker 12 ratios of the Department of Labor or the applicable State 13 apprenticeship agency.

14 (c) **PARTICIPATION.**—Each contractor and subcontractor who employs 4 or more individuals to perform construction, alteration, or repair work on a covered project 17 shall employ 1 or more qualified apprentices to perform 18 such work.

19 (d) **COMPLIANCE.**—(1) If the Secretary determines, 20 upon receipt of a complaint or on the Secretary's own initiative, that a covered project is not being carried out in 21 accordance with the requirements of this section, the Secretary shall withhold from payments otherwise due the 22 contractor as a penalty, or require the payment by the 23 contractor of a penalty, in the amount of not less than 24 \$5,000, but not more than \$10,000, for each hour of the 25 26

1 apprenticeship utilization requirement that is not  
2 achieved.

3 (2) A determination by the Secretary under para-  
4 graph (1) shall be grounds for contract termination.

5 (3) A contractor or subcontractor that violates the  
6 requirements of this section shall be prohibited from per-  
7 forming work on any covered project for 5 years.

8 (e) REPORTING REQUIREMENTS.—(1) Before com-  
9 mencing work on a contract for a covered project, the con-  
10 tractor shall submit to the recipient of assistance and the  
11 Secretary an estimate of—

12 (A) the total labor hours to be performed under  
13 the contract; and

14 (B) the number of qualified apprentices pro-  
15 posed to be employed under the contract, categorized  
16 by trade or craft.

17 (2) While the covered project is ongoing, the con-  
18 tractor shall include with each payment application to the  
19 recipient of assistance and Secretary a report containing  
20 the following information:

21 (A) The names of all qualified apprentices and  
22 their apprentice registration or identification num-  
23 ber.

1           (B) The number of qualified apprentices and  
2           labor hours worked by them, categorized by trade or  
3           craft.

4           (C) The number of journey level workers and  
5           labor hours worked by them, categorized by trade or  
6           craft.

7           (3) When a contractor is not subject to progress bill-  
8           ing, the contractor shall submit the periodic reports re-  
9           quired by paragraph (2) within a comparable time frame.

10          (4) Within 60 days after concluding work on the con-  
11          tract, the contractor shall submit to the recipient of assist-  
12          ance and the Secretary a verified statement of the total  
13          journeyworker and apprentice hours performed on the  
14          project. The contractor and subcontractors shall maintain  
15          all personnel records relating to the reporting require-  
16          ments of this subsection for a period of at least 3 years  
17          after final completion of the work.

18          (5) The information described in this subsection shall  
19          be public and shall not be exempt from disclosure under  
20          section 552(b) of title 5, United States Code.

21          (6) If the Secretary determines that any of the infor-  
22          mation required by this subsection contains false or mis-  
23          leading information that was provided knowingly or with  
24          reckless disregard for the truth, or omits information that  
25          was omitted knowingly or with reckless disregard of the

1 truth, the contractor or subcontractor for which the infor-  
2 mation was submitted shall be prohibited from performing  
3 work on a covered project for a period of 5 years, and  
4 shall be further subject to penalties and sanctions, includ-  
5 ing contract termination.

6 (7) Any misrepresentation or omission included in the  
7 reporting required by this subsection shall constitute a  
8 false record or statement material to a false or fraudulent  
9 claim for purposes of subchapter III of chapter 37 of title  
10 31, United States Code.

11 (f) WAIVER.—(1) Upon request by a contractor or  
12 recipient of assistance, the Secretary may adjust the ap-  
13 prenticeship utilization requirement otherwise applicable  
14 to the contract for a specific covered project, when the  
15 contractor has provided documentary evidence of—

16 (A) a demonstrated lack of availability of quali-  
17 fied apprentices in the geographic area in which the  
18 contract will be performed; and

19 (B) a good-faith effort on the part of the con-  
20 tractor and its subcontractors to comply with the ap-  
21 prenticeship utilization requirement.

22 (2) A waiver granted under this subsection and the  
23 rationale of the Secretary concerned for granting the waiv-  
24 er shall be public information and shall not be exempt

1 from disclosure under section 552(b) of title 5, United  
2 States Code.

3 (g) CONTRACTING.—The recipient of assistance shall  
4 cause to be inserted in a contract for a covered project  
5 stipulations to effectuate the requirements of this section.  
6 The stipulations shall provide that the contractor shall be  
7 jointly and severally liable for any violation of the require-  
8 ments of this section that is committed by one of its sub-  
9 contractors.

10 (h) DEFINITIONS.—In this section:

11 (1) The term “contractor” means a general  
12 contractor or other lead or prime contractor on a  
13 covered project.

14 (2) The term “covered project” means construc-  
15 tion, alteration, or repair work assisted in whole or  
16 in part under sections 111, 131, or 202 of this Act.

17 (3) The term “labor hours” means the total  
18 number of hours devoted to the performance of con-  
19 struction activities (as defined in Sector 23 of the  
20 North American Industry Classification System) by  
21 employees of the contractor and its subcontractors.  
22 The term excludes hours worked by foremen, super-  
23 intendants, owners, and persons employed in a bona  
24 fide executive, administrative, or professional capac-



1 (b) LABOR STANDARDS.—The Secretary of the  
2 Treasury shall require a taxpayer, as a condition of receiv-  
3 ing a credit under a program enumerated in subsection  
4 (a), to satisfy each of the following requirements during  
5 the taxable year for which such credit is claimed and any  
6 other period in which construction, alteration or repair  
7 work was performed for purposes of qualifying for a credit  
8 set forth in subsection (a):

9 (1) WAGES.—All laborers and mechanics em-  
10 ployed by contractors or subcontractors in the per-  
11 formance of construction, alteration, or repair work  
12 on any qualified facility, energy storage property,  
13 electricity generation facility, advanced nuclear  
14 power facility, qualifying advanced energy project,  
15 qualified offshore wind property, or other projects  
16 contemplated by the credit programs enumerated in  
17 subsection (a), shall be paid wages at rates not less  
18 than those prevailing on projects of a similar char-  
19 acter in the locality as determined by the Secretary  
20 of Labor in accordance with subchapter IV of chap-  
21 ter 31 of title 40, United States Code. With respect  
22 to the labor standards in this paragraph, the Sec-  
23 retary of Labor shall have the authority and func-  
24 tions set forth in Reorganization Plan Numbered 14

1 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section  
2 3145 of title 40, United States Code.

3 (2) LABOR HOURS FOR QUALIFIED APPREN-  
4 TICES.—

5 (A) IN GENERAL.—All contractors and  
6 subcontractors engaged in the performance of  
7 construction, alteration, or repair work on any  
8 project described in paragraph (1) shall, subject  
9 to subparagraph (B), ensure that not less than  
10 15 percent of the total labor hours of such work  
11 be performed by qualified apprentices.

12 (B) APPRENTICE-TO-JOURNEYWORKER  
13 RATIO.—The requirement under subparagraph  
14 (A) shall be subject to any applicable require-  
15 ments for apprentice-to-journeyworker ratios of  
16 the Department of Labor or the applicable  
17 State apprenticeship agency.

18 (C) PARTICIPATION.—Each contractor and  
19 subcontractor who employs 4 or more individ-  
20 uals to perform construction, alteration, or re-  
21 pair work on a covered project shall employ 1  
22 or more qualified apprentices to perform such  
23 work.

24 (D) REPORTING.—While the project is on-  
25 going, the contractor shall, with each payment

1 application to the taxpayer, include a report  
2 with the following:

3 (i) The names of all qualified appren-  
4 tices and their apprentice registration or  
5 identification number.

6 (ii) The number of qualified appren-  
7 tices and labor hours worked by them, cat-  
8 egorized by trade or craft.

9 (iii) The number of journey level  
10 workers and labor hours worked by them,  
11 categorized by trade or craft.

12 Such reports shall be included with the tax-  
13 payer's declaration under subsection (a).

14 (E) MAINTENANCE OF RECORDS.—The  
15 taxpayer, its contractor, and subcontractors,  
16 shall maintain all reports and personnel records  
17 relating to the requirements of subparagraph  
18 (D) for a period of at least 3 years after final  
19 completion of the work.

20 (F) SUBMISSION OF RECORDS.—The tax-  
21 payer, its contractor, and subcontractors, shall  
22 immediately submit, upon request by the Sec-  
23 retary of Energy, the documents described in  
24 subparagraphs (D) and (E). Failure to produce  
25 such documents shall result in penalties.

1 (G) WAIVER.—The Secretary of the Treas-  
2 ury may, upon request by a taxpayer, adjust  
3 the requirements of subsection (b)(2) for a spe-  
4 cific project, when the taxpayer has provided  
5 documentary evidence of the following:

6 (i) A demonstrated lack of availability  
7 of qualified apprentices in specific geo-  
8 graphic areas.

9 (ii) A good faith effort on the part of  
10 the taxpayer, its contractor and sub-  
11 contractors to comply with the require-  
12 ments of subsection (b)(2).

13 Such waivers and the rationale of the Secretary  
14 of the Treasury for granting such waivers shall  
15 be public and shall not be exempt from disclo-  
16 sure under section 552(b) of Title 5, United  
17 States Code.

18 (H) DEFINITIONS.—For purposes of this  
19 subsection:

20 (i) CONTRACTOR.—The term “con-  
21 tractor” means a general contractor or  
22 other lead or prime contractor on a con-  
23 struction project described in subsection  
24 (b)(2).

1           (ii) LABOR HOURS.—The term “labor  
2 hours” means the total number of hours  
3 devoted to the performance of construction  
4 activities (as defined in Sector 23 of the  
5 North American Industry Classification  
6 System) by employees of the contractor  
7 and all subcontractors. The term excludes  
8 hours worked by foremen, superintendents,  
9 owners, and persons employed in a bona  
10 fide executive, administrative, or profes-  
11 sional capacity as defined in part 541 of  
12 title 29, Code of Federal Regulations.

13           (iii) QUALIFIED APPRENTICE.—The  
14 term “qualified apprentice” means an em-  
15 ployee participating in an apprenticeship  
16 program (as such term is defined in sec-  
17 tion 3131(e)(3)(B) of the Internal Revenue  
18 Code of 1986).

19           (iv) SUBCONTRACTOR.—The term  
20 “subcontractor” means any person or com-  
21 pany, at any tier, that performs some or  
22 all of the obligations of the contractor on  
23 a construction project described in sub-  
24 section (b)(2).

1 (I) PREEMPTION.—Nothing in this sub-  
2 section shall preempt applicable State or local  
3 laws or policies that provide for additional  
4 skilled and trained workforce requirements on  
5 construction projects.

6 (c) ENFORCEMENT.—

7 (1) INVESTIGATIONS.—Upon receipt of a com-  
8 plaint or its own initiative, the Secretary of Energy,  
9 in consultation with the Secretary of Labor, shall re-  
10 quest and review the weekly payroll records of con-  
11 tractors and subcontractors engaged in the perform-  
12 ance of any construction, alteration, or repair work  
13 on projects described in paragraphs (1) and (2) of  
14 subsection (b), the reports set forth in subpara-  
15 graphs (D) and (E) of subsection (b)(2), and inter-  
16 view individuals employed by such contractors and  
17 subcontractors, to determine whether the require-  
18 ments of paragraphs (1) and (2) of subsection (b)  
19 have been met.

20 (2) PENALTIES.—The taxpayer shall be respon-  
21 sible for compliance by any contractor or lower tier  
22 subcontractor performing any construction, alter-  
23 ation, or repair work on projects described in para-  
24 graphs (1) and (2) of subsection (b). If the Sec-  
25 retary of Energy determines, upon receipt of a com-

1       plaint or its own initiative, that a project was not  
2       carried out in accordance with the requirements of  
3       this section, the taxpayer shall be liable to the De-  
4       partment of the Treasury for the following:

5               (A) For violations of subsection (b)(1), the  
6       taxpayer shall be liable for any unpaid wages.  
7       In addition, the taxpayer shall be liable to the  
8       Department of the Treasury for an administra-  
9       tive penalty in the amount of not less than  
10      \$1,000 but not more than \$5,000 per each indi-  
11     vidual not paid the proper prevailing rate.

12              (B) For violations of subsection (b)(2), the  
13      taxpayer shall be liable to the Department of  
14      the Treasury in the amount of not less than  
15      \$1,000, but not more than \$5,000, for each  
16      hour of the apprenticeship utilization require-  
17      ment that is not achieved.

18              (3) FALSE STATEMENTS.—If the Secretary of  
19      Energy, in consultation with the Secretary of Labor,  
20      determines that any of the information in a declara-  
21      tion under subsection (a) or report under subsection  
22      (b)(2)(D) and (E), contains false or misleading in-  
23      formation that was provided knowingly or with reck-  
24      less disregard for the truth, or omits information  
25      that was omitted knowingly or with reckless dis-

1 regard of the truth, the taxpayer shall no longer be  
2 eligible for any of the credits enumerated in sub-  
3 section (a), and shall be fined not less than \$5,000  
4 but not more than \$10,000.

5 (4) TRANSPARENCY.—Declarations under sub-  
6 section (a) and reports under subsection (b)(2)(D)  
7 and (E) shall be publicly available and the informa-  
8 tion contained therein shall not be exempt from dis-  
9 closure under section 552(b) of title 5, United States  
10 Code.

○